Seclusion in Professional Context:
Studies on the Methodical Management of Intensive Psychiatric Care

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Chapter 1

General introduction

Introduction

For the management of imminent violence in psychiatric facilities, coercive measures may be used as a last resort. One of these measures is seclusion, the enclosure of a patient in a special bare room, which has been approved for this purpose by the government, with the door locked (GGZ Nederland, 2012). While historically, the use of seclusion is widespread, it is not supported by trial-derived evidence regarding its effects (Muralidharan & Fenton, 2006; Sailas & Fenton, 2000); seclusion is a distinct negative event for most patients and may even be a traumatic experience (Frueh et al., 2005; Van der Merwe, Muir-Cochrane, Jones, Tziggili, & Bowers, 2013). The use of seclusion has therefore raised international concern that forced hospitals to search for alternatives. Many initiatives to reduce the use of seclusion have been investigated, rendering varying results (Fisher, 2003; Gaskin, Elsom, & Happell, 2007; Johnson, 2010; Scanlan, 2010; Sullivan et al., 2005). The ongoing use of seclusion and the slow pace of change demonstrate the complexity of the management of aggression on psychiatric wards (Keski-Valkama et al., 2007; Vruwink, Mulder, Noorthoorn, Uitenbroek, & Nijman, 2012). In the research presented here, the phenomenon of seclusion is studied from the perspective of the professional ambience in which it takes place; this professional context is the focus for studies on the methodical management of intensive psychiatric care and the use of seclusion.

Factors influencing seclusion rates

As most episodes of seclusion start with a decision of nurses, insight into their decision making may produce a point of action to intervene. The few studies in this field revealed that decision making on seclusion is a highly complex process and relies on a combination of personal, professional, and organizational discourses and practices (Holmes & Jacob, 2007); clinical decisions are influenced by patient factors and the (in)availability of sufficient, adequately trained staff, as well as by health-care-team culture and the understanding of aggressive behavior (Crook, 2001; Larue, Dumais, Ahern, Bernheim, & Mailhot, 2009). Thus, decision making on seclusion seems to be influenced by characteristics of the patient, the staff and the situation on the ward, but the relative contribution of these variables to the decision-making process of nurses is as yet unknown.

A consistent (and intriguing) finding since the 1990s is that seclusion rates vary greatly between countries, hospitals and wards (Betemps, Somoza, & Buncher, 1993; Forquer, Earle, Way, & Banks, 1996; Janssen et al., 2008; Korkeila, Tuohimäki, Kaltiala-Heino, Lehtinen, & Joukamaa, 2002; Way & Banks, 1990). Although international differences could be explained partly by methodological issues and differences in legal provisions (Janssen et al., 2011; Muir-Cochrane & Holmes, 2001; Steinert & Lepping, 2009; Steinert et al., 2010), on the national level, facility effects still are an

important source of variability. Patient factors, especially (young) age and diagnosis (such as psychosis, mania, personality disorder, and intellectual disability), contribute to these differences but do not fully explain them (Angold, 1989; Gudjonsson, Rabe-Hesketh, & Szmukler, 2004; Husum, Bjørngaard, Finset, & Ruud, 2010; Janssen et al., 2013). 'Objective' ward characteristics like ward size, bed occupancy rate, turn-over rate, census, shift and staffing level, do not have straightforward effects on the use of seclusion either (Fisher, 1994; Janssen, Noorthoorn, van Linge, & Lendemeijer, 2007; Lay, Nordt, & Rössler, 2011; Morrison & Lehane, 1995; Way, Braff, Hafemeister, & Banks, 1992). In contrast, factors concerning staff performance and ward culture appear to be important determinants of 'containment', that is all methods used by professionals to manage or prevent dangerous or destructive behaviors (for example, seclusion, special observation, detention during hospitalization, searching procedures, restrictions on inpatients, intensive care, manual restraint, and enforced medication). A multivariate cross-sectional design on data of 136 acute psychiatric wards revealed that the provision of an effective structure of rules and routines for patients is the staff feature most strongly and consistently associated with lower conflict and containment rates (Bowers, 2009). Inadequate regulation of the nurses' emotional reactions on patient aggression and seclusion or restraint may result in a cycle of emotional withdrawal of nurses, ineffective nurse-patient communication and a repetition of aggression incidents (Moran et al., 2009). A team climate with a higher level of expression of anger and aggression among team members and the perception of insufficient safety measures in the workplace predicts an increased risk of recourse to seclusion and restraint (De Benedictis et al., 2011). Papadopoulos et al. (2012) analyze what variables were associated with the likelihood of patient conflict (such as verbal abuse, violence, and rule breaking) and containment events at acute inpatient psychiatric wards. Thirteen themes are significantly associated with conflict and containment score transitions, 11 of which are staff centered. For example, negative staff morale and staffing change significantly increase the likelihood that conflict and containment will occur, whereas report of positive staff practice significantly decreases the likelihood of such events occurring (Papadopoulos et al., 2012). The findings of these studies designate staff factors as prominent candidates for further study to understand – and change – seclusion practices.

Improving staff performance in the prevention of seclusion

Interventions to improve staff performance in the prevention of seclusion have been included in many seclusion reduction programs. However, these interventions usually are part of a multifaceted approach, for example the six core strategies developed by Huckshorn (2004a): leadership toward organizational change, use of data, work force development, use of seclusion and restraint prevention tools, consumer roles in inpatient settings, and debriefing tools. It is still to determine which are the critical

elements of such seclusion reduction programs (Fisher, 2003; Gaskin et al., 2007; Johnson, 2010; Scanlan, 2010; Sullivan et al., 2005). In the research on the prevention of seclusion, the lack of references to the treatment process as such is striking. In a few studies, the use of individualized treatment plans was part of a comprehensive reduction program, but the relative contribution of the plans to the results was either not determined (Taxis, 2002; Wieman, Camacho-Gonsalves, Huckshorn, & Leff, 2014) or disappeared as a factor in a multiple regression analysis of each of the component efforts of the reduction program (Donat, 1998; Donat, 2003). Being the rationale of patient care, the treatment process is a natural point of action to improve staff performance. An amelioration of this key task would require only modest human and financial resources. In the event that changing the treatment process is demonstrated to decrease seclusion rates, a considerable contribution can be made to the cost-efficiency of seclusion reduction programs. A strategy of this nature is the Methodical Work Approach.

The Methodical Work Approach and seclusion

The Methodical Work Approach (MWA) entails a systematic, transparent and goal-driven way of working with cyclic evaluation and adjustment of the working process (Coussens, 2010; Tiemens, Kaasenbrood, & De Niet, 2010; Winkelaar, 2001). This cyclic process resembles the well known Plan-Do-Check-Act (PDCA)-cycle, developed as a method for achieving efficiency in Japanese car manufacturing (Deming, 1986) and introduced in health care quality improvement as the Plan-Do-Study-Act (PDSA)-cycle (Langley et al., 2009). Whereas the PDSA-cycle involves four stages: hypothesis formation (Plan); implementing the new process with data collection (Do); interpreting the results (Study); and a decision as to what to do next (Act) (Speroff & O'Connor, 2004), the MWA distinguishes five phases: 1) translation of problems into goals, 2) search for means to realize the goals, 3) formulation of an individualized plan by matching specific means to individual needs and preferences, 4) implementation of the plan and 5) evaluation and readjustment (Coussens, 2010; Tiemens et al., 2010). Unless the PDSA-cycle, the MWA is not primary a management tool but a working method for health care professionals. The MWA is closely related, although not identical, to the model for evidence-based medicine (EBM) with its five steps: 1) converting the need for information into an answerable question, 2) tracking down the best evidence with which to answer that question, 3) critically appraising that evidence for its validity, impact and applicability, 4) integrating the critical appraisal with our clinical expertise and with our patient's unique biology, values and circumstances and 5) evaluating our effectiveness and efficiency in executing steps 1-4 and seeking ways to improve them both for next time (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). EMB as well as the MWA differ from the PDSA-cycle by the elaboration of steps preparing for a clinical decision or care plan. Whereas EBM

has been developed to practice and teach a strategy to integrate the best research evidence in clinical practice, the MWA refers to the methodical organization of the treatment process itself.

Central in the MWA is the individual plan, which describes the goals of the patient as well as the specific means to reach these goals. Both goals and means are chosen in line with the patient's individual needs and preferences, which offers the patients a clear outlook on their goals and the way they can cooperate with the team to achieve these goals. A well-defined individualized plan provides a more predictable setting for the patients and a clear guidance for the nurses, which could reduce the risk of escalations and the need for seclusion. By the emphasis on cyclic evaluation, the MWA promotes critical reflection on the results during implementation of the treatment plan and a systematic analysis of possible causes of delay. As an (imminent) episode of seclusion interferes with the achievement of the patient's goals, the goal-driven character of the MWA implies priority for the prevention of seclusion. Because of these features, we assume that the MWA is a promising intervention to reduce the use of seclusion and merits a study into its effects on seclusion rates.

The Methodical Work Approach and staff performance

Notwithstanding the wealth of intervention studies to reduce seclusion rates, very little is known about the way staff is affected by such interventions. Research on organizational change to improve quality and outcomes of care for patients with severe mental illness showed that there is a profound lack of insight in the so-called black box of change processes and the impact of change on professional performance (Franx et al., 2008). When the MWA is introduced for the reduction of seclusion, three exponents of staff performance need to be explored: professionals' attitudes toward seclusion, work engagement and team reflexivity.

Professionals' attitudes toward seclusion

Seclusion reduction programs often aim at attitudinal change, but the effect of training on professionals' attitudes toward containment procedures has not been established. Whereas some authors did not find any change (Gerdtz et al., 2013; Hahn, Needham, Abderhalden, Duxbury, & Halfens, 2006; Kontio et al., 2013), Mann-Poll, Smit, van Doeselaar, & Hutschemaekers (2013) demonstrated that, after a seclusion reduction program, professionals increased their scores on two out of eight subscales, namely ethical concerns about using seclusion and the option of 'more care' as an alternative to seclusion. Their findings suggest that professionals' attitudes toward seclusion are rather endurable but can be modified. Attitudes toward seclusion seem to be related to the actual use of seclusion: there is a consistent tendency of staff to approve of containment techniques once they have employed

them in their practice (Whittington, Bowers, Nolan, Simpson, & Neil, 2009) and the more professionals are personally involved in seclusion, the more they believe in its effectiveness (Van Doeselaar, Sleegers, & Hutschemaekers, 2008). In a vignette study, the frequency of seclusion participation and - to a lesser extent - years of seclusion experience were positively related with the tendency to seclude (Mann-Poll, Smit, de Vries, Boumans, & Hutschemaekers, 2011).

Work engagement

Staff ability to manage imminent aggression and acting out is undermined by high levels of stress: emotional exhaustion and staff burn out are associated with justifications for the use of seclusion and higher containment rates (Bowers, Nijman, Simpson, & Jones, 2011; Happell & Koehn, 2011). Strategies to improve staff morale, for example educational interventions designed to enhance the skill and competency of staff, tend to show a positive impact on job satisfaction and to reduce stress, burnout and/or staff turnover (Gilbody et al., 2006), but also negative effects of staff training on these parameters are described (Jones, 2009). In recent years, research on the appreciation of working conditions has turned from burn out to work engagement: a positive, fulfilling work-related state of mind, characterized by vigor, dedication, and absorption (Schaufeli, Bakker, & Salanova, 2006). Whereas burnout is associated with higher seclusion rates, the reverse is expected for work engagement.

Team reflexivity

Professional development can be promoted by the explicitation of 'tacit knowledge' by means of reflection and interaction with others (Kwakman, 1999; Schön, 1983). Several authors draw attention to the importance of the integration of reflection in routine practice, to facilitate ongoing discourse and heighten awareness relating to the proportionality of intrusive and coercive interventions including seclusion (Brennan, Flood, & Bowers, 2006; Flood et al., 2006; Van de Sande, 2014). Such integrated reflective practice can be seen as an exponent of team reflexivity, which is defined as "the extent to which group members overtly reflect upon, and communicate about, the group's objectives, strategies (e.g. decision-making) and processes (e.g. communication) and adapt them to current or anticipated circumstances" (West, Garrod, & Carletta, 1997). Team reflexivity has been identified as a determinant of team effectiveness and group decision making (Gurtner, Tschan, Semmer, & Nägele, 2007; Hoegl & Parboteeah, 2006; West et al., 1997; West, 2000). Therefore, it may be an explanatory factor for the large facility effects on seclusion rates, in a sense that a highly reflexive team, critically discussing seclusion practices and considering alternative strategies may be more successful in preventing seclusion than a less reflexive team. If so, an intervention that promotes team reflexivity may contribute to the prevention of seclusion.

Research questions, design and thesis outline

In this thesis, we study the methodical management of intensive psychiatric care and the use of seclusion within the professional context. The objectives are to investigate the effects of an intervention to reduce the use of seclusion (implementation of the MWA), as well as furthering insight into professional decision making and performance in relation to changes in seclusion practices after implementation of the intervention. Our research questions are: 1) What is the relative contribution of patient variables, interpersonal variables and context variables on nurses' decision making on seclusion and how is decision making influenced by team reflexivity? 2) Does implementation of the MWA result in a reduction of the use of seclusion? 3) How does the implementation of the MWA affects professionals' attitudes toward and decision making on seclusion, work engagement and team reflexivity? and 4) How does the implementation of the MWA affects the working process of the team?

These questions are investigated during implementation of the MWA in a psychiatric hospital, at a ward for intensive psychiatric care for patients with severe mental illness, especially a combination of psychoses and substance-use disorders. Staff uses coercive measures frequently to maintain the safety on the ward, and seclusion rates are relatively high. To improve the treatment process and to diminish the use of seclusion, the attending psychiatrist introduces the principles of the MWA, and does so within the context of a study into its effects. Thus, the implementation of the MWA is carefully monitored; the effects on professional performance and seclusion practices are evaluated by comparing the experimental ward with a control group. Because of the unique character of the experimental ward within the hospital, we form a control group out of three wards for intensive psychiatric care for patients with severe mental illness and disruptive or dangerous behaviors.

A potential source of bias is formed by the dual role of the experimental ward's psychiatrist who is also the principal investigator. The psychiatrist's influential position within the team may cause the nurses of the experimental ward feel pressed to change their behavior, which could be stress inducing; otherwise, their perception of the working conditions may improve out of appreciation for their psychiatrist's attention as part of the study, without any relation to the new working practice. Such obvious disadvantages of a dual role of the clinician – investigator could be avoided by performing the study at another ward for intensive psychiatric care. However, an essential reformation of the treatment process is only achievable with the full cooperation of the consultant psychiatrist. Internal ownership of the process is one of the key elements of effective organizational change (Rix & Sheppard, 2003), and lack of involvement of the ward's psychiatrist and inadequate collaboration within the clinical team were found to be the main barriers to effective reduction of the use of

coercive measures (Thornicroft et al., 2013; Voskes, Theunissen, & Widdershoven, 2011). After incomplete implementation of the MWA, the effects on seclusion rates and on staff performance may not be fully evaluated, which may result in a type II error, the failure to reject a false null hypothesis, and in a "false negative" conclusion. Performing the study at the ward of the principal investigator minimizes this risk, but increases the risk of a type I error, the incorrect rejection of a true null hypothesis and a "false positive" conclusion. This issue is addressed by several measures. First, in the collection of quantitative data on staff performance by means of nurse-answered questionnaires, anonymity is strictly guaranteed, as to prevent any (perceived) pressure on nurses. Second, for the evaluation of the use of seclusion we use the data of the hospital registration system on coercive measures, which are the most objective and reliable data available. Last, the research project is closely and critically reviewed from the start onwards by an external scientific supervising committee, to guard the methodological standards.

Our first research question is addressed in chapter 2. Here, we present the results of a vignette study, in which psychiatric nurses indicate to what extent they will or will not decide to seclude an imaginary patient. Patient factors, interpersonal factors and contextual factors are studied, as well as the influence of team reflexivity on decision making. We postulate that the effect of patient variables will be rather small in comparison to the effect of contextual and interpersonal variables. When comparing teams on tendency to seclude and team reflexivity, we expect an inverse relationship between the reflexivity of a team and the team's tendency to seclude.

In chapter 3, we describe how the MWA is implemented and we present the results on the use of seclusion (research question 2). We hypothesize that, compared with the control wards, at the ward where the MWA is implemented a more pronounced reduction of the use of seclusion is achieved. Outcome measures are the incidence and duration of seclusion.

In chapter 4, we report the effects of the implementation of the MWA on four staff parameters: nurses' decision making on seclusion, attitudes toward seclusion, work engagement and team reflexivity (research question 3) and we analyze the influence of the organizational context on the implementation process. We look for changes in time as well as differences between the experimental ward and the control wards. As critical reflection on the working process is considered the most essential feature of the MWA (Coussens, 2010; Tiemens et al., 2010; Winkelaar, 2001), we expect that working along the principles of the MWA stimulates team reflexivity at the experimental ward. So we postulate for the experimental ward, compared with the control wards, a more pronounced increase in team reflexivity, which will be reflected also in the nurses' attitudes toward seclusion, in a sense of increased ethical concerns about seclusion and more openness to alternatives, and a more pronounced decrease in tendency to seclude. As the MWA is a congruent strategy with potential advantages

for the nursing staff, we expect that scores for work engagement will rise more at the experimental ward than at the control wards.

In a qualitative study, we investigate how the MWA affects the working process at the experimental ward (research question 4). In chapter 5, we describe in detail several patients' treatment trajectories to get insight into essential factors for progress. We use these findings together with staff observations and evaluations to analyze the changes in staff performance after the implementation of the MWA.

Chapter 6 presents the clinical implications of our research for the psychiatrist's role within a multidisciplinary team, at a ward for the treatment of inpatients with severe mental illness and a high risk to experience seclusion.

In chapter 7, the main findings of this thesis are summarized, methodological and theoretical issues are discussed, and suggestions for further research are formulated.

Chapter 2

Nurses' decision on seclusion: Patient characteristics, contextual factors, and reflexivity in teams

Abstract

While many characteristics of patients, professionals and facilities with relevance to seclusion rates have been investigated, their relative importance is unclear. Virtually no attention has been paid to team processes and reflexivity in relation to decision making on seclusion. The aim of this paper is to estimate the effects of these factors on nurse decision making on seclusion. Sixty Dutch psychiatric nurses of four closed wards reported team reflexivity and their tendency to seclude a theoretical patient. Approachability (whether there was a good or hardly any possibility to communicate with the patient), staffing level and confidence within the team had the greatest impact on the decision to seclude. Intra class correlation was 0.30. There was a large interaction effect of reflexivity with team 4, and team reflexivity was highly correlated with team tendency to avoid seclusion. In nurses' decision on seclusion, the effects of 'pure' patient characteristics are small as compared with the effects of interpersonal and contextual factors, and nurses vary widely in their judgement. Team reflexivity is related to the tendency to prevent seclusion.

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Introduction

Research on seclusion rates has been focused on factors associated with the patient, the facility and the individual professional. The age of the patient is negatively associated with seclusion rates; findings on gender and ethnicity are inconsistent (Angold, 1989). The highest seclusion rates are found for patients with psychosis, mania, personality disorder, and intellectual disability (Angold, 1989; Fisher, 1994; Gudjonsson et al., 2004). Precipitants for seclusion are usually: (impending) bodily harm to the patient or others, and suicidal behavior (Angold, 1989; Fisher, 1994; Keski-Valkama et al., 2010; Sailas & Wahlbeck, 2005). Seclusion rates vary greatly between hospitals and countries (Betemps et al., 1993; Crook, 2001; Forquer et al., 1996; Janssen et al., 2008; Korkeila et al., 2002; Way & Banks, 1990). Facility factors such as census, shift and staffing level, have been extensively investigated with however contradictory results (Fisher, 1994; Janssen et al., 2007; Morrison & Lehane, 1995; Way et al., 1992). Crook (2001) found that on-the-spot clinical decisions of expert mental health nurses are influenced by the (in)availability of sufficient, adequately trained staff, and that the decision-making process is made tenuous by conflicting tensions between allowing patients to accept responsibility at one hand and preset protocols on the other. Mental health professionals differ strongly in their attitudes towards seclusion. The more professionals are personally involved in the seclusion process, the more positive they evaluate it (Van Doeselaar et al., 2008; Whittington et al., 2009).

Although interventions directed at the collaboration of the staff have been part of several policies to reduce the use of seclusion (Gaskin et al., 2007), the effects of team processes on seclusion rates have received little attention. The way a team handles issues of coercion can be viewed from the perspective of team reflexivity, which is defined by West as 'the extent to which group members overtly reflect upon, and communicate about, the group's objectives, strategies (e.g. decision-making) and processes (e.g. communication) and adapt them to current or anticipated circumstances' (West et al., 1997). Because team reflexivity has been identified as a determinant of team effectiveness and group decision making (Gurtner et al., 2007; Hoegl & Parboteeah, 2006; West et al., 1997; West, 2000), team reflexivity could be an important explanatory factor for the large facility effects on seclusion rates, in a sense that a highly reflexive team, critically discussing seclusion practices and considering alternative strategies, would be more successful in preventing seclusion than a less reflexive team.

Larue et al. (2009) point at the complex interplay of factors influencing the decisions on seclusion and restraint and propose a theoretical multifactorial model, including characteristics of patients and of care providers, environmental and organizational factors.

The aim of the current study is to quantify the relative importance of several factors influencing nurse decision making on seclusion and to explore the effect of reflexivity on the tendency to seclude patients. It is hypothesized that in nurses' decision on seclusion, the effect of patient variables will be rather small in comparison to the effect of contextual and interpersonal variables and that there will be an inverse relationship between the reflexivity of a team and the team's tendency to seclude.

Method

Participants

Four teams of nurses in a Dutch psychiatric hospital participated in the study. The wards they staffed all included seclusion facilities. Two of the wards were 'long stay' wards for the treatment of patients with psychoses and substance-use disorders (team 1) and for patients with personality disorders or intellectual disabilities (team 2) respectively; in addition the teams of a forensic psychiatric ward (team 3) and a ward for crisis-intervention (team 4) participated. All nurses with a permanent contract working in one of the four teams were invited. Anonymity was guaranteed, but participants were asked to note their age, gender, years of experience in secluding patients, frequency of participation in the seclusion process and the team in which they worked. Of 75 employees invited to participate in the study, 60 completed the survey (80%). The response rate varied per team: 95.2% for team 1, 71% for team 2, 68.4% for team 3 and 85.7% for team 4. Table 1 summarizes the characteristics of the respondents. They were in majority over 40 years of age (61.7%) with a little

Table 1 Characteristics of the Respondents

	Team				Gender		Age			
	1	2	3	4	Male	female	20-29	30-39	40-49	50+
N	20	15	13	12	34	26	14	9	18	19
%	33.3	25.0	21.7	20.0	56.7	43.3	23.3	15.0	30.0	31.7

	Working experience of seclusion in years						Frequency of participation in seclusion				
	none	<1	1-2	2-5	5-10	>10	never	<1 m.	1-4 m.	2-7 w.	>1 d.
N	1	12	4	9	10	24	1	8	34	16	1
%	1.7	20.0	6.7	15.0	16.7	40.0	1.7	13.3	56.7	26.7	1.7

Age and working experience are in years.
m., monthly; w., weekly; d., daily.

preponderance of males (56.7%) and they were very experienced in seclusion: 16.7% had 5-10 years of experience in seclusion and 40.0% more than 10 years. Eighty-five percent of them had participated in the seclusion of patients on at least a monthly base.

Measures

We used two web-based questionnaires, one of which consisted of 16 vignettes of theoretical patients in an imaginary situation at the ward. Participants were asked to indicate on a 9-point Likert scale to what extent they certainly would or would not proceed to seclude the patient. Their scores on this scale were called 'tendency to seclude'. The vignettes were all built on the same pattern, but differed from each other by one or more variables concerning either the patient or the situation at the ward. The vignettes were adapted from the professional judgement study by Mann-Poll *et al.* (2011) from which the most relevant variables were selected for the current study. Six patient variables were selected: main diagnosis (schizophrenia, bipolar disorder manic or depressive, personality disorder), severity of threat (imminent or actual dangerous behavior), target of threat (focused on the patient, other persons or materials), approachability of the patient (whether there was a good or hardly any possibility to communicate with the patient), seclusion history (whether previously separated or not) and patient network (whether or not a supportive network). Two contextual variables were selected: perceived confidence in colleagues within the team and the staffing level at that time (dayshift with sufficient staff = high, dayshift with insufficient staff = moderate, evening or weekend shift = low).

Reflexivity was measured with the 'Shortlist Reflexivity in teams' developed by Schippers *et al.* (2007), consisting of two scales: evaluation/learning (7 items) and discussing processes (4 items). Individual members scored the reflexive functioning of their own team by answering questions like 'We work out what we can learn from past activities' and 'The methods used by the team to get the job done are often discussed'.

Statistical analysis

In order to estimate the effect of several factors influencing nurses' decision on seclusion, all interval data were standardized and for all categorical variables dummy codes were used. As the web based questionnaire could not be completed without answering every question, there were no missing data. Data were collected on three levels: the level of the vignette (characteristics of the imaginary patient and of the context), the level of the nurse (demographic and professional characteristics of the participants) and the level of the team; team reflexivity takes an intermediate position as individual participants were asked to judge the reflexivity of their team. Thus the sample design was a nested design (vignettes within nurses within teams). Because

of this hierarchical structure of the data, with possible predictors at different levels, and because of a substantial intra class correlation (0.30), multilevel analysis was used (Hox, 2002; Kreft & de Leeuw, 1998; Snijders & Bosker, 1999). As there were only 4 teams, a three-level-model was not suitable; the membership of a team and the reflexivity-scores were handled as characteristics of the participants, thus creating two levels: the level of the vignettes (level 1) and the level of subjects (level 2).

The tendency to seclude was the dependent variable in an univariate multilevel regression analysis. Three models were evaluated: a baseline model (model 0), a model with features of vignettes and subjects after stepwise backward removal of non-significant fixed effects (model 1) and a model focusing on the interaction between team and reflexivity (model 2). Analyses were performed with MLWin 2.16 (Goldstein *et al.*, 1998). The estimates of the effects in model 2 were tested by means of one-sided t-tests.

To investigate the relation between team reflexivity and prevention of seclusion, bivariate correlations between the mean team scores on reflexivity and the mean team tendency to seclude were calculated. Significance testing was carried out one sided.

Results

Relative importance of factors influencing the decision to seclude

The results of the multilevel regression analysis are presented in Table 2. All vignette variables contributed significantly to the final model (2). The patient variable with the greatest impact on the tendency to seclude was approachability: if the patient was described as 'hardly approachable' the mean tendency to seclude was 0.52 higher then when he or she was described as 'approachable' (95% CI 0.44, 0.60). Given the fact that - as a result of standardization - 96% of the scores at tendency to seclude are between -2 and +2, an increase or decrease by 0.5 is 1/8 of the total range. Actual danger as opposed to imminent danger resulted in an increase of tendency to seclude by 0.22 (95% CI 0.14, 0.30). Focus on another person as opposed to focus on oneself resulted in an increase by 0.29 (95% CI 0.19, 0.39), whereas focus on material as opposed to focus on oneself resulted in a decrease of 0.12 (95% CI -0.22, -0.02). A diagnosis of bipolar disorder, manic or depressive, as opposed to either schizophrenia or personality disorder increased the tendency to seclude by 0.18 (95% CI 0.08, 0.28).

Table 2 Fixed effects estimates (top) and random parameters estimates (bottom) for models of the predictors of nurses' tendency to seclude

Parameter	Model 0	Model 1	Model 2	P
Fixed effects				
intercept	0.00 (0.08)	0.00 (0.08)	0.00 (0.09)	
bipolar disorder		0.17 (0.05)	0.18 (0.05)	0.000*
personality disorder			0.03 (0.05)	0.295
actual danger		0.22 (0.05)	0.22 (0.04)	0.000*
focus on material		-0.13(0.05)	-0.12 (0.05)	0.009*
focus other person		0.28 (0.05)	0.29 (0.05)	0.000*
not approachable		0.51 (0.04)	0.52 (0.04)	0.000*
previous seclusion		0.22 (0.04)	0.23 (0.04)	0.000*
no network		0.12 (0.04)	0.13 (0.04)	0.000*
high staffing level		-0.46 (0.05)	-0.45 (0.05)	0.000*
moderate staffing level		-0.13 (0.06)	-0.11 (0.06)	0.030*
good confidence		-0.56 (0.04)	-0.56 (0.04)	0.000*
team 2			-0.17 (0.15)	0.128
team 3			0.01 (0.17)	0.484
team 4		-0.31 (0.17)	0.89 (0.50)	0.039*
reflexivity			0.12 (0.16)	0.221
team 2 - reflexivity.			-0.05 (0.20)	0.393
team 3 - reflexivity			-0.02 (0.23)	0.459
team 4 - reflexivity			-1.24 (0.45)	0.004*
Random parameters				
Level 1 intercept	0.70 (0.03)	0.45 (0.02)	0.45 (0.02)	
Level 2 intercept	0.30 (0.06)	0.30 (0.06)	0.27 (0.05)	
-2*log likelihood	2508.97 (N=960)	2095.73 (N=960)	2089.29 (N=960)	

Standard errors are in parentheses. Degrees of freedom were 941 for all vignette variables, 52 for teams, reflexivity and interactions (of team 2, 3 and 4 respectively with reflexivity). All t-tests were performed one-sided. P is the probability of a more extreme value. The variables in model 2 for which was found a $P < 0.05$ are marked by a *.

A history of previous seclusion increased this tendency by 0.23 (95% CI 0.15, 0.31) and the absence of a supportive network by 0.13 (95% CI 0.05, 0.21). The effects of the context variables were of a similar size as the approachability of the patient: a high staffing level as opposed to a low staffing level decreased the tendency to seclude by 0.45 (95% CI -0.55, -0.35), while good confidence within the team as compared to moderate to poor confidence within the team resulted in a decrease by 0.56 (95% CI -0.64, -0.48). None of the variables on the level of the nurses (age, gender, years of experience in secluding patients and frequency of participation in the seclusion process) resulted in a significant contribution to the model.

The main effects of neither team nor reflexivity reached significance (except for team 4). However, introducing the interaction of team and reflexivity in model 2 resulted in a large effect for team 4 : -1.24 (95% CI -2.12, -0.36); members of team 4 who scored the reflexivity of their team as higher than mean had a very low tendency to seclude, whereas subjects of team 4 who judged the reflexivity of their team as lower than mean had a very strong tendency to seclude.

The sum of the random effects of the intercept within level 1 and level 2 in model 2 is 0.72; thus the variance explained by the variables included in the model is 28%. In model 0, the variance on the level of the subjects (level 2) is 0.30, whereas the total variance is 1, because of standardization. Thus the intra class correlation (the ratio of the variance on level 2 to the total variance) is 0.30, meaning that 30% of the variance in tendency to seclude is associated with differences between nurses.

Team reflexivity and team tendency to seclude

The mean scores per team on reflexivity and on tendency to seclude are displayed in Table 3, which shows an inverse relation between the reflexivity of a team and the team's tendency to seclude. Bivariate correlation testing resulted in a Pearson correlation coefficient of -0.97, significant at the 0.05 level ($p = 0.017$, one sided).

Table 3 Mean scores per team on reflexivity and on tendency to seclude

team	Mean reflexivity scores	Mean tendency to seclude
1,0	3.40 (0.46)	5.12 (1.19)
3,0	3.48 (0.60)	5.03 (1.10)
2,0	3.69 (0.82)	4.71 (1.12)
4,0	4.46 (0.26)	4.33 (1.61)

Standard deviations are in parentheses.

Discussion

Main findings

All the vignette variables investigated proved to be significant predictors of the tendency to seclude. The largest effects were found for the level of approachability of the patient, staffing level and confidence in each other within the team. Although level of approachability was classified as a patient variable, it also has a clear interpersonal meaning: if a patient is considered as (hardly) not approachable, this is an assessment by the nurse after an attempt at communication, a process to which both nurse and patient make a contribution. Also, whether or not having a supportive network is not a 'pure' patient characteristic either. If we take these remarks into account, the effects of 'real' patient characteristics (diagnosis 0.18, history of seclusion 0.23, severity of threat 0.22, target of threat 0.41) are rather small in comparison to the interpersonal factors (approachability 0.52, network 0.13) and contextual factors (staffing level 0.45, confidence in each other within the team 0.56). A large interaction effect was found for reflexivity and team 4, the team with the highest scores on reflexivity. For the other teams, with lower scores on reflexivity, no effects were found. Thus, in teams where reflexive processes were not very outspoken, individual judgements of the team reflexivity did not effect the tendency to seclude, whereas in a highly reflexive team the individual perception of the team reflexivity had a large - inverse - effect on the individual's tendency to seclude. Although team 4 as a whole had the lowest mean tendency to seclude, individuals of team 4 with reflexivity scores below the mean had a large tendency to seclude. This suggests that differences in the extent of personal involvement in the collective reflecting of a team, could have a large - and perhaps unwanted - effect on the decision-making of the individual members with respect to seclusion.

On the level of the team, a negative correlation was found between the reflexivity of a team and it's tendency to seclude; however, this finding has to be interpreted with caution because only four teams participated in the study.

Comparison with other studies

The large effect we found for approachability of the patient on nurses' decisions on seclusion is also reflected in the study of Muir-Cochrane & Harrison (1996). They divided the nursing interventions associated with seclusion into two subcategories, before and after the start of a seclusion procedure respectively. The first subcategory was defined as 'intervening, i.e. the range of nursing interventions involved in making contact with the patient', which seems to implicate that the ability of patient and nurse to communicate with each other is considered crucial for the outcome of a situation of high tension and crisis.

Also Moran et al. (2009) emphasize the importance of communication to prevent seclusion. They call attention to the influence of emotional distress experienced by nurses in their care for disturbed and aggressive patients. They demonstrate a cycle of patient aggression and violence leading to restraint and seclusion, followed by suppression of emotional distress by and emotional withdrawal of the nurse, resulting in ineffective nurse-patient communication and more patient aggression.

Although the literature about actual seclusion rates in relation to staffing level and shift has been inconclusive (Fisher, 1994; Janssen et al., 2007; Morrison & Lehane, 1995; Way et al., 1992), our findings are consistent with qualitative studies in that staffing level and confidence within the team are very important factors in the minds of nurses confronted with a highly disturbed patient (Lendemeijer, 1997; Wynaden et al., 2002).

We did not find any relation of nurse characteristics like gender, age, years of experience with, and level of personal involvement in seclusion with the tendency to seclude, which is in accordance with some publications (Nijman, Duangto, Ravelli, & Merckelbach, 1994; O'Malley, Frampton, Wijnveld, & Porter, 2007) but at odds with some other (Whittington et al., 2009; Wynaden et al., 2002). The findings of Mann-Poll et al. (2011) that rater characteristics explained 32% of the judgement on necessity to seclude were not reproduced in the current study, which can be partly explained by differences in the study design and population: three of the rater characteristics of Mann-Poll (education, type of care and institute) were no part of the design of the current study, in which all participants were nurses of more or less comparable teams of the same hospital. Also with respect to years of experience with and frequency of participation in seclusion, our respondents were a more homogeneous group. Moreover, part of the discrepancy in outcome between the studies can be due to a difference in statistical model; Bachmann et al. (2008) pointed at the importance of accounting for correlated data because each respondent assesses different vignettes, the very reason why multilevel analysis was used in the current study. However, individual differences were found to be important also in this study: almost 30% of the unexplained variance could be attributed to inter-subject variance. Which factors count for this inter-subject variance is not clear, but one could think of personal characteristics such as tolerance, attitude, creativity, flexibility, sense of humor and personality, as suggested by Lendemeijer (1997). The subjective nature of the decision to seclude has been a concern to several authors: Keski-Valma et al. (2010) concluded that current restraint and seclusion practices are too open to subjective assessments and intuitive decision-making and Whittington et al. (2006) states that 'the decision to restraint or seclude is ultimately subjective, albeit informed by best evidence and practice, and any subjective decision will be influenced by personal beliefs and attitudes.'

To the best of our knowledge, the relationship between reflexivity and decisions on seclusion has not been investigated so far. Our result that an interaction effect of reflexivity and team existed only in a highly reflexive team, resembles the findings of De Dreu (2002), that minority dissent predicted team innovations and overall team effectiveness only when teams had high levels of team reflexivity.

Limitations of the study

Various study limitations must be acknowledged. The sample was derived from only one institute in the Netherlands. Although the overall response rate was high (80%), the response rate varied per team. Moreover, the number of participating teams and the number of nurses per team were rather small so the effect of the factor team may have been underestimated and results can not easily be generalized for teams.

In order to prevent a cognitive burden upon the participants, (see also Bachmann et al. 2008) the number of variables used in the Mann-Poll et al. (2011) study was reduced, thus simplifying the complex reality. For instance, variables like age and gender of the patient (which did not contribute to the seclusion explanation model of Mann-Poll) were not included. Finally one could question to what extent the judgements on imaginary patients represent real decisions in daily life on the ward. In economics the external validity of discrete choice experiments is relatively well established (Lancsar & Louviere, 2008; Louviere, Hensher, & Swait, 2000), but in health care validity tests of simulation methodology are scarce (Gould, 1996). Lanza (1990) studied the degree of accuracy that the subject's causal attribution scores on an assault vignette were predictive of causal attribution scores in the actual assault situation; her findings suggest a relationship.

Meaning and implications of the study

In this study, many factors found by other investigators to influence the decision to seclude not only are replicated, but their effects even are quantified. This may have implications for clinical practice as well as for further research; the relative importance of interpersonal and subjective factors calls for a focus on the individual nurse and the encounter between nurse and patient, as proposed by Whittington & Mason (1995). The influence of the culture and the level of team reflexivity on the decision of nurses to seclude also warrants the importance of further investigation of contextual factors, preferably in a study including a larger number of teams.

Chapter 3

Reduction in the use of seclusion by the Methodical Work Approach

Abstract

Patient care in a psychiatric setting can benefit from a more systematic, transparent, and goal-driven way of working. The Methodical Work Approach (MWA), with its cyclic five phases, provides such an approach: (i) translation of problems into goals; (ii) search for means to realize the goals; (iii) formulation of an individualized plan; (iv) implementation of the plan; and (v) evaluation and readjustment. We examined the effect of the MWA on the use of seclusion at a ward for the intensive treatment of inpatients with psychoses and substance-use disorders. The team of this ward implemented the MWA. Special attention was paid to the involvement of the patient and his/her family in the treatment process and to the role of the coordinating nurse. Compared to control wards within the same hospital, at the ward where the MWA was implemented, a more pronounced reduction was achieved in the number of incidents and in the total hours of seclusion. Implementation of the MWA can contribute to a reduction in the use of seclusion.

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Introduction

The widespread use of seclusion in psychiatric facilities to manage imminent violence has been the focus of international concern and has forced hospitals to search for alternatives (Huckshorn, 2004b; Huckshorn & Lebel, 2009; Paterson & Duxbury, 2007; Sailas & Fenton, 2000; Whittington et al., 2006). In the Netherlands, seclusion is still a frequently used intervention (Janssen et al., 2008). Seclusion is defined as the enclosure of a patient in a special bare room, which has been approved for this purpose by the government, with the door locked (GGZ Nederland, 2012). In their reviews of efforts to reduce the use of seclusion and restraint, several authors have emphasized the need for a multifaceted approach and more systematic research to determine the critical elements for such an approach (Fisher, 2003; Johnson, 2010; Scanlan, 2010; Sullivan et al., 2005). Gaskin et al. (2007) identified 'leadership, the monitoring of seclusion episodes, staff education and changing the therapeutic environment' as common elements of seclusion-reduction programmes, but also observed that 'owing to the complexity of the interventions used in these facilities, it is difficult to assess which interventions – if any – were efficacious in producing the reduction in the use of seclusion' (Gaskin et al., 2007). As comprehensive changes and the implementation of multifaceted approaches require considerable human and financial resources, studies on the effectiveness of singular interventions could contribute to the cost-efficiency of strategies to reduce the use of seclusion in psychiatric facilities. Borckardt et al. (2011) for example, found inexpensive physical changes to inpatient units to significantly reduce the need for seclusion and restraint. Another promising strategy is helping professionals apply and reinforce care skills with which they are already familiar with. Such a strategy is the Methodical Work Approach (MWA).

The MWA is part of the professional training of almost all mental health personnel in the Netherlands and Belgium. The approach entails a systematic, transparent and goal-driven way of working with cyclic evaluation and adjustment of the working process (Coussens, 2010; Tiemens et al., 2010; Winkelaar, 2001). Based on the concept of 'planned change' (Bennis, Benne, & Chin, 1961), the MWA draws upon the practices of evidence-based medicine, as described by Sackett et al. (2000). The MWA involves five phases: (i) translation of problems into goals; (ii) search for means to realize the goals; (iii) formulation of an individualized plan by matching specific means to individual needs and preferences; (iv) implementation of the plan; and (v) evaluation and readjustment (Coussens 2010; Tiemens et al. 2010) (Fig. 1). The five phases of the MWA can apply to several aspects of the treatment process: the therapeutic relation, the treatment process and/or the conditions for treatment (Tiemens et al., 2010). In the light of the prominent position being given to the MWA in the education of Dutch and Flemish mental health professionals and also the

numerous studies and publications in the Dutch language, it is remarkable that there are virtually no references to this topic in the international literature (Bruijns & Hofmans, 1984; De Bekker, van Meyel, Pijnenborg, & Rijsemus, 1990; Eriksson, Koivukoski, & Valkonen, 1993; Koekkoek, 2011; Koopman, 1983; Mostert & Kruijswijk Jansen, 1997; Pel-Littel & Spieker, 2010; Snellen, 2007; Winkelaar, 2001). Therefore, a secondary aim of this paper is to 'spread the word' about the MWA in the field of mental health care.

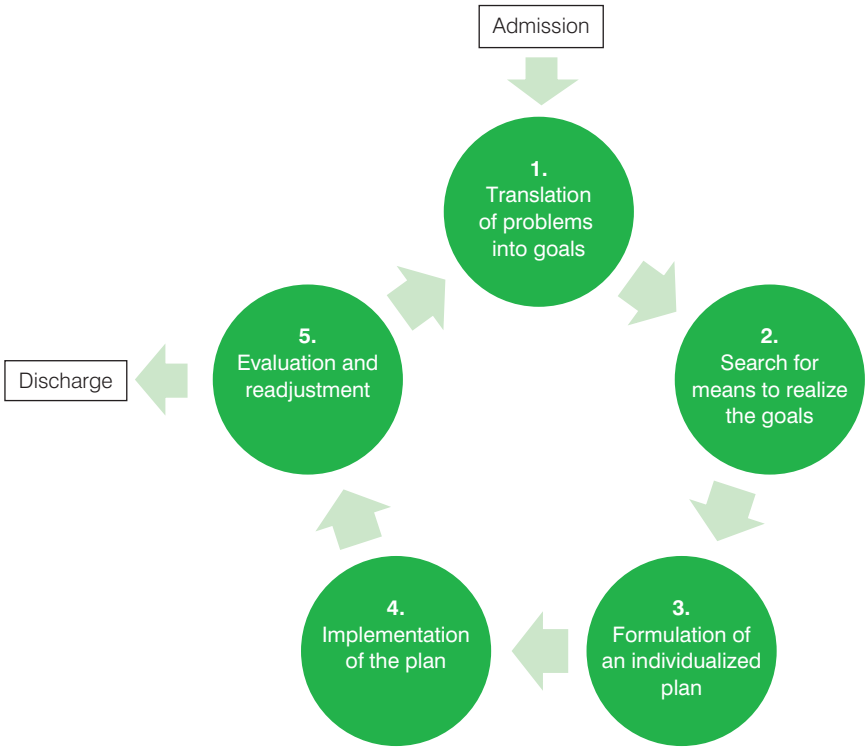

Figure 1 The Methodical Work Approach to patient care

Some authors state that the MWA is a prerequisite for improving the quality of care giving (Coussens 2010; Winkelaar 2001). A key element of the MWA is the individual plan, which describes the goals of the patient, as well as the specific means to achieve these goals. Both goals and means are chosen in line with the patient's individual needs and preferences, which makes the MWA inherently patient oriented. Treatment and care plans are considered to be the rationale of mental health care, and as such, are a legal obligation, at least in the Netherlands. However, making treatment goal directed and involving patients in the development and evaluation of

care plans has proven to be difficult, especially in relation to inpatient mental health care (Storm & Davidson, 2010; Storm & Edwards, 2013). Moreover, evidence about the effectiveness of care plans is sparse, and the needs assessed, the care planned, and the care delivered are not always congruent (J. Hall & Callaghan, 2008). Because of the emphasis on cyclic evaluation, the MWA prevents a dissociation of the care as planned and the care as delivered and keeps the plan at the heart of the care. The systematic and transparent procedure structures the treatment. For inpatients with severe mental illness these features of the MWA may be all the more important, offering them a clear outlook on their goals and the way they can cooperate with the team to achieve these goals. For these patients, such an individualized plan adds to the predictability of their often involuntary admission. Presumably, this tempers their frustration and could reduce the risk of escalations and the need for seclusion. Well-defined plans also give the nursing team guidance in their work with the patients and will strengthen the confidence in one self and in each other. Confidence within the team has been found to be a very important factor in the decision-making of nurses on seclusion (Boumans, Egger, Souren, Mann-Poll, & Hutschemaekers, 2012; Lendemeijer, 1997; Wynaden et al., 2002). Critical reflection on the working process is considered the most essential feature of the MWA (Coussens, 2010; Tiemens et al., 2010; Winkelaar, 2001). Through its emphasis on cyclic evaluation, the MWA promotes critical reflection on the results and a systematic analysis of possible causes of delay. Seclusion is not only a distinct negative event for most patients (Van der Merwe et al., 2013), but it also interferes with the achievement of their goals, as few goals can be worked towards from within a seclusion room. Thus, the goal-driven character of the MWA implies that, for patients with a known risk of being involved in seclusion, the individualized plan should include means to prevent and contain dangerous behavior. Moreover, any interruption of the treatment by an escalation and/or seclusion event requires a critical analysis of the causes of the event and a search for alternative means, in order to improve the individualized plan.

Notwithstanding the significance of the MWA in health-care education in the Netherlands and Belgium, implementation in daily practice is impeded by numerous barriers comparable to those that hinder the implementation of evidence-based practices, such as staff and/or patient resistance, lack of time, insufficient skills to read research articles, and a lack of autonomy to change practice (Amodeo et al., 2011; Asadoorian, Hearson, Satyanarayana, & Ursel, 2010; Majid et al., 2011; Solomons & Spross, 2011). In addition, there is no research demonstrating the effects of the MWA on the quality of patient care in psychiatric facilities or reduction in the use of seclusion. The use of individualized treatment plans, as part of a comprehensive programme revision to reduce the use of seclusion in psychiatric facilities, has been examined, but the relative contribution of the plans to the results was either not determined (Taxis, 2002) or disappeared as a factor in a multiple regression analysis

of each of the component efforts of the reduction programme (Donat, 1998; Donat, 2003). In Borckhardt et al.'s (2011) study, the involvement of patients in treatment planning was not found to be associated with a reduction in seclusion and restraint. The discrepancy between the axiomatic inclusion of the MWA in the education of Dutch health-care professionals, and the lack of evidence demonstrating the benefits for patient care, were an incentive for the present study. We developed a strategy to integrate the MWA more effectively into the care of patients, and investigated whether the implementation of the MWA at a ward for the intensive treatment of patients with combined psychoses and substance-use disorders resulted in a reduction in the use of seclusion. The effect of the MWA was evaluated, and a comparison to a control group was made. We hypothesized that at the ward where the MWA was implemented, a more pronounced reduction over time in the use of seclusion would be achieved compared with the control wards.

Methods

Participants and study design

The data on which the present prospective study is based were collected in the Vincent van Gogh psychiatric hospital in Venray, the Netherlands. In 2006, in the wake of a national project aimed at the reduction in the use of coercive measures in psychiatric facilities, a hospital-wide programme was initiated to reduce the rates of seclusion and other coercive measures. The programme included education on the negative effects of coercive measures, feedback to all ward teams about their use of these measures, and appointment of 'ambassadors' from within the teams to help stimulate changes in attitudes and practices. In addition to this programme, one team also implemented the MWA. In March 2008, this team moved to a ward with 21 beds in a new building, which included seclusion facilities. The team delivered specialized intensive treatment to patients with a combination of psychoses and substance-use disorders. Almost all patients were involuntarily admitted, and some of them had already been in conflict with the law and/or treated in a forensic psychiatric setting. The patients were referred from other sections of the hospital because of dangerous behavior stemming from their combined disorders and non-response to previous treatment attempts. The ward was staffed by a multi-disciplinary team of nurses, a social worker, a psychologist, and a psychiatrist.

As there was no other ward in the hospital with a comparable patient population, we formed a control group from three multidisciplinary teams providing intensive treatment for patients with a severe mental illness and disruptive or dangerous behavior. These teams also moved to new buildings with seclusion facilities, which meant that they provided intensive treatment in a physical environment similar to that

of the experimental wards. The control wards consisted of: (i) seven beds for acute psychiatric intensive care, receiving patients requiring, at the moment of admission or shortly afterwards, a more intensive treatment than could be offered at the acute ward; (ii) 20 beds for the specialized treatment of patients with personality disorders and/or intellectual disabilities and severe behavior disturbances needing extended intensive treatment due to treatment resistance or failure at the acute ward; and (iii) 18 beds for forensic psychiatric treatment, receiving patients with psychoses and substance-use disorders, similar to the patients of the experimental ward.

The data from the three control wards were combined. For all the patients admitted to the wards between 1 April 2008 and 30 June 2010, information was collected from the electronic medical records, including age, sex, marital status, length of stay and psychiatric diagnosis. Psychiatric diagnoses were available as codes based on the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (American Psychiatric Association, 1994), with a maximum of two diagnoses on axis I and two on axis II. To account for comorbidity, all diagnoses on both axes were counted and divided into main categories. Two diagnoses for one patient within the same main category (e.g. dependent personality disorder and avoidant personality disorder or alcohol dependence and cannabis abuse) were counted as one diagnosis. Due to the lack of a comparable control group, a quasi-experimental non-equivalent control-group design with multiple measurements was used (Reichardt, 2009; Robson, Shannon, Goldenhar, & Hale, 2001).

Introducing the Methodical Work Approach: 'old' and 'new' situations

At all wards, including the experimental ward before the implementation of the MWA, the multidisciplinary teams held sessions on a regular basis with each individual patient to plan and evaluate the treatment process. Treatment plans were composed by the psychologist or psychiatrist, and nursing care plans by the coordinating nurse. As the formats of the treatment plan and the nursing care plan were different, multidisciplinary collaboration was hampered by a lack of congruency between both plans. Most attention was paid to the description of problems and psychopathology, whereas the formulation of goals and interventions was rather vague. In the weekly multidisciplinary meetings, the nursing team received ad-hoc suggestions to handle actual problems without reference to the care plans. The care as planned was not delivered consistently, and progress was not systematically evaluated.

To prepare for change, an expert group on the experimental ward created the conditions for a successful implementation of the MWA. For both the treatment plan and the nursing care plan, a new format was developed, in which problems, goals, and means could be specified per life domain. These life domains were derived from

the Camberwell Assessment of Needs Short Appraisal Schedule (Andresen, Caputi, & Oades, 2000) and were clustered by the expert group into a suitable framework with the following domains: daily living activities; social, financial, physical, sexual, or psychiatric problems; and substance-use disorders. A domain 'existential questions' was added because of apparent needs in the specific patient group. The expert group also proposed to strengthen the involvement of the patient, along with the family (if possible), by appointing a prominent role to the coordinating nurse. The expert group then reshaped the treatment process, guided by the principles of the MWA. The resulting procedure was as follows: the coordinating nurse helped the patient prepare for a treatment-planning session by assessing and discussing the problems and strengths in the life domains with the patient; the coordinating nurse assisted with the formulation of patient goals for specific life domains. When the family was involved, the coordinating nurse enquired about the family's vision on the goals of the patient and invited the family to participate in the treatment process. The coordinating nurse also considered searching the literature for evidence of specific interventions to be used as means in the care plan. The multidisciplinary team then met with the patient and family to outline the short- and long-term goals and the means to achieve these. All decisions made at the meeting were recorded in the treatment plan by the psychologist or psychiatrist and the nursing care plan by the coordinating nurse. In the team members' daily reports, and during meetings and consultations, team members were encouraged to describe their interventions in relation to the goals and means in the life domains listed in the plan. Progress was regularly evaluated by the coordinating nurse and discussed with the patient and family. When delays were observed, possible causes were sought at all levels of the treatment process, and adjustments to the plan made accordingly. At the next treatment-planning session, the team evaluated, together with the patient and family, whether the goals had been reached and whether continuation of treatment at the ward was still indicated or discharge to a less-intensive treatment setting could be recommended. The problems and strengths of the patient were reassessed; goals and means for the next period were formulated, and the plans were adjusted accordingly.

Implementation of the Methodical Work Approach

The strategy to implement the MWA consisted of three steps: (i) preparation, in which the team of the experimental ward was actively involved. All of the professionals in the multidisciplinary team were invited to the expert group to redesign the treatment process; (ii) changing practice, in which the complete multidisciplinary team participated in a training program of three sessions, which started in January 2009. The principles of the MWA were introduced and the five phases of the treatment process were explained. The procedure for the treatment process, as designed by

the expert group, was demonstrated and integrated in the routine of the ward. In the training sessions, the team started to practice with the formulation of care plans using the MWA and was given feed-back on the quality of the plans; and (iii) consolidation. A second training program of the MWA lasted 3 days in June 2009 by the authors of a MWA manual (Tiemens et al., 2010).The application of the MWA into daily practice was elaborated on and illustrated with examples of patient care. The program also included a workshop on the principles of evidence-based practice, in order to improve the second phase of the MWA: the search for means to achieve the goals. The nurses learned how to ask 'answerable questions', and how to execute a search strategy in the literature. Guidelines were given to the nurses for deciding whether and how to use the evidence they found to modify their plans.

Measures

An electronic registration system (Argus), which was introduced in the Netherlands in 2006, was used to monitor all coercive measures (GGZ Nederland, 2012; Janssen et al., 2011). For research purposes, the data from this registration system can be made available in quarterly tallies. As outcome measures, we used the number of incidents (i.e. initiation of an episode of seclusion) and the number of hours that patients spent in seclusion. Data collection started in April 2008 and continued until June 2010.

Statistical analyses

For all participating wards, the records from the Argus registration system were calculated per 1000 patient days. The data of the three wards of the control group were then combined.

The data consisted of time points (independent variable) and the use of seclusion (dependent variable). The research question was whether implementation of the MWA resulted in a reduction in the use of seclusion over time. We tested the hypothesis that at the ward where the MWA was implemented, a more pronounced reduction over time in the use of seclusion would be achieved than at the control wards by performing a regression analysis. Because the hypothesis implies the comparison of two regression coefficients of the dependent variable, for the experimental ward and for the control wards respectively, two separate regression analyses should be performed. However, the coefficients of two separate regression coefficients cannot be compared. Therefore, the two regression analyses were combined into one: a multivariate regression analysis, which is actually a regression analysis with two dependent variables: seclusion by the experimental ward and seclusion by the control wards. This multivariate regression analysis had four predictors: group (experimental ward *vs* control wards), time (the time points), the interaction of group and time, and the intercept. A dummy was used to code 'group': value 0 for seclusion by the control wards; value 1 for seclusion by the experimental

ward. The regression coefficient of 'group' indicates whether there are initial differences between the experimental ward and the control wards. The regression coefficient of 'time' shows the effect of time on the control wards. The regression coefficient of the 'interaction of group and time' shows how the effect on the experimental ward differs from the effect on the control wards. In this way, the difference can reliably and directly be tested for significance.

As there were only 18 measurements, we did the analysis in two steps. Because the focus was on the difference in slope, we first included 'interaction of group and time' and the 'intercept'. In the next block, we added 'group' and 'time'. If this did not result in a significant increase in R^2, the predictors 'group' and 'time' were excluded, leaving two predictors: the 'intercept' and 'interaction of group and time'. Separate multivariate multiple regression analyses were performed for the number of incidents and for the number of hours of seclusion.

The assumption of normality of the residuals was determined; the skewness of the unstandardized residuals was −0.44 for seclusion incidents and −0.22 for the number of hours of seclusion (standard error: 0.54). The kurtosis of the residuals was −0.11 for seclusion incidents and −1.02 for the number of hours of seclusion (standard error: 1.04). All of the analyses were conducted using SPSS/PASW Statistics (version 18; IBM, Armonk, NY, USA).

Results

Description of patient groups

The sociodemographic and clinical characteristics of the patients admitted to the experimental ward and the control wards during the study period are presented in Table 1. The 134 patients admitted to the experimental ward did not differ significantly from the 544 patients admitted to the control wards with respect to age, but were significantly more often male and single. There were significant differences in the mean duration of stay (129 days on the experimental ward *vs* 62.1 days on the control wards) and in diagnosis. The experimental ward had more patients with psychotic disorders and substance-use dis-orders, and fewer patients with emotional disorders.

To detect any changes over time in the case mix, a comparison was made between the patients admitted before and after 1 July 2009, dividing the study period in two phases. No significant differences were found for age, sex, or marital status. Compared with the first phase, fewer patients on the control wards received the diagnostic classification 'unspecified' in the second phase. The mean length of stay was significantly shorter in the second phase than in the first phase, for the experimental ward (53.9 *vs* 193.6 days, $P < 0.001$), as well as the control wards (30.6 *vs* 88.6 days, $P < 0.001$).

Table 1 Sociodemographic and clinical characteristics of the patients

Parameter	Experimental ward (n = 134)		Control wards (n = 544)	
	Mean	SD	Mean	SD
Length of stay (days)**	129.0	228.7	62.1	138.3
Age (years)	39.5	12.4	38.0	12.8
	n	%	n	%
Sex**				
Male	107	79.9	336	61.8
Female	27	20.1	208	38.2
Marital status*				
Single	126	94.0	437	80.3
Married ‡	5	3.7	54	9.9
Unknown ‡	3	2.2	53	9.7
DSM-IV-Diagnosis **				
Emotional disorders ‡ (300.xx; 309.81; 296.2x -296.4x; 296.9x; 311.; 309.xx)	11	8.2	121	22.2
Bipolar disorders (296.0x; 294x - 296.8x)	11	8.2	26	4.8
Psychotic disorders ‡ (295.xx; 297.xx; 298.xx)	79	59.0	223	41.0
Substance-use disorders ‡ (303.90; 304.xx; 305.xx; 291.xx; 292.xx)	56	41.8	151	27.8
Other disorders (299.xx; 302.xx; 307.xx; 312.xx; 314.xx; 290.xx; 293.xx; 294.xx)	15	11.2	78	14.3
Axis 1 unspecified (V61.10; V61.20; V61.21; V71.09; 799.9; no information)	16	11.9	104	19.1
Personality disorders (301.xx)	45	33.6	213	39.2
Intellectual disabilities (317; 318.0; V61.89)	5	3.7	31	5.7

*$P < 0.01$, **$P < 0.001$, resulting from independent *t*-test (age, length of stay) or χ^2-test (sex, marital status, diagnosis). ‡ Standardized residuals in χ^2-test <-2 or >2. DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, fourth edition; SD, standard deviation.

Seclusion outcomes

As illustrated in Figures 2 and 3 and Table 2, on the experimental ward, the number of seclusion incidents per 1000 patient days decreased from 15 in the first quarter of the study period to three in the last quarter of the study period. The number of hours spent in seclusion by the patients of the experimental ward decreased from 934 hours/1000 patient days at the first measurement in 2008 to 62 hours/1000 patient days at the last measurement in 2010. On the control wards, the number of seclusion incidents per 1000 patient days was 11 during the first quarter of the study and 12 during the last quarter of the study. The first measurement in 2008 showed 398 hours spent in seclusion, whereas the last measurement in 2010 showed 356 hours spent in seclusion. There was a wide range, with 1016 hours spent in seclusion in the third quarter of 2009.

Testing of changes over time

For the number of incidents, as well as for the number of hours of seclusion, the

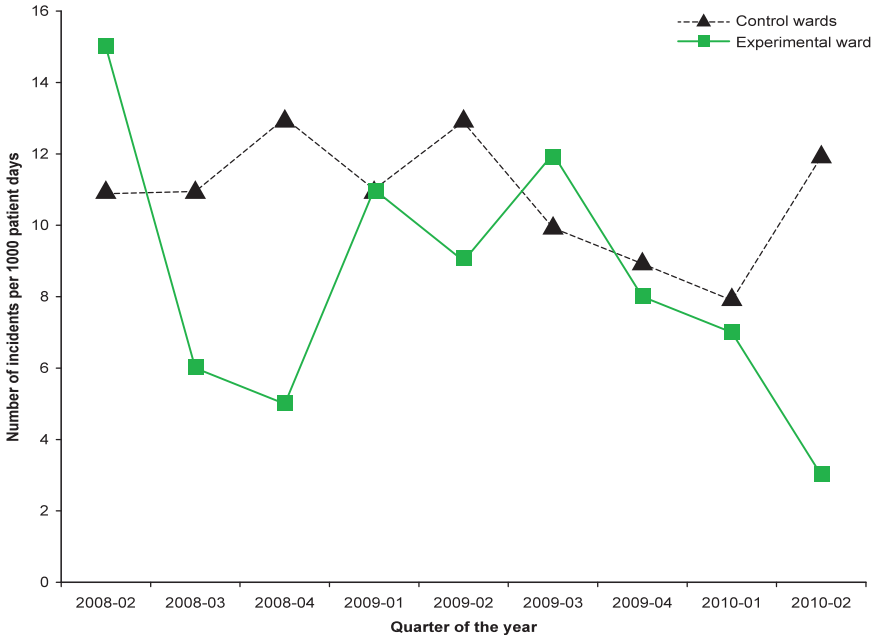

Figure 2 Incidents of seclusion over time

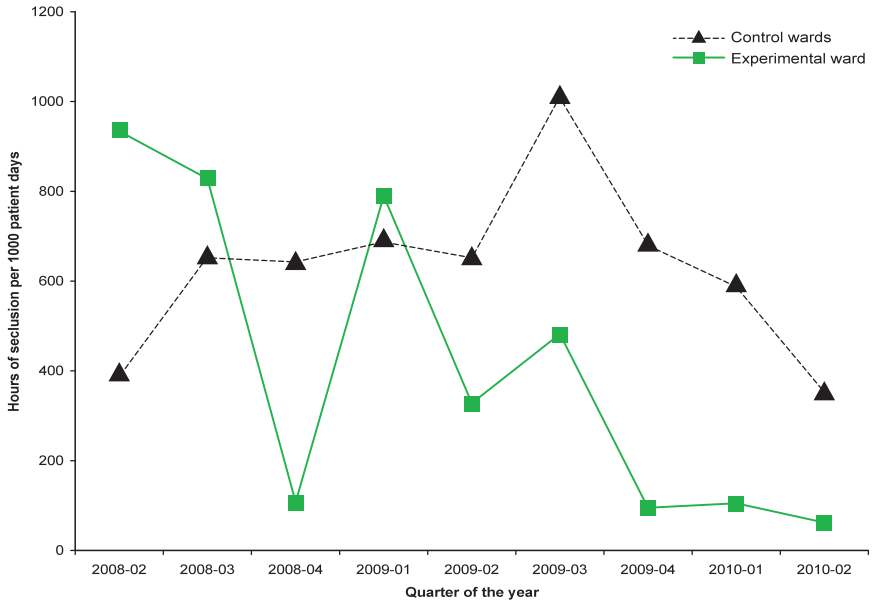

Figure 3 Hours of seclusion over time

Table 2 Use of seclusion over time

Measure	Group	2008–02	2008–03	2008–04	2009–01	2009–02	2009–03	2009–04	2010–01	2010–02
Seclusion										
Incidents	Experimental ward	15	6	5	11	9	12	8	7	3
	Control wards	11	11	13	11	13	10	9	8	12
Hours	Experimental ward	934	828	108	790	328	482	95	105	62
	Control wards	398	659	646	697	657	1016	687	597	356

Time starts with second quarter of the year 2008 (2008–2) and ends with the second quarter of the year 2012 (2010–2). Data were calculated per 1000 patient days.

multivariate multiple regression analyses were performed in two steps. There were no initial differences between the experimental ward and the control wards, nor for the number of incidents or the number of hours of seclusion. The second step did not result in a significant increase of the R^2, so the predictors 'group' and 'time' were excluded, leaving the predictors 'intercept' and 'interaction of group and time'. The results of the multivariate multiple regression analyses are presented in Table 3. The control wards showed no statistically-significant changes over time in the number of incidents or in the hours of seclusion. In contrast, the experimental ward differed statistically significantly from the control wards by a reduction in the number of seclusion incidents ($P < 0.01$) and a reduction in the number of seclusion hours ($P < 0.01$).

Table 3 Testing of changes in the use of seclusion over time

	Control wards			Difference Experimental vs. Control wards		
Seclusion	B_C	SE	P-value	B_e	SE	P-value
Incidents	-0.22	0.36	n.s.	-0.55	0.20	< 0.01
Hours	0.84	28.85	n.s.	-63.46	17.25	< 0.01

Changes over time in the number of incidents (initiation of an episode of seclusion) and in the number of hours of seclusion are tested by multivariate multiple regression analyses. Unstandardized regression coefficient of time (B_c) shows the effect of time for the control wards. Unstandardized regression coefficient of the interaction of group and time (B_e) shows how the effect for the experimental ward differs from the effect for the control wards. All of the statistical tests were one sided. NS, not significant; SE, standard error.

Discussion

Our findings show a reduction in the use of seclusion following the implementation of the MWA. In comparison with the control wards, on the experimental ward, a more pronounced reduction over time was achieved for the number of incidents, as well as the total hours of seclusion. Given that the experimental and control wards were in the same hospital and participating in the same institutional project to reduce the use of seclusion and restraint, the effects of a single project component, the implementation of the MWA into patient care, are striking. Our findings differ from previous research on seclusion-reduction programmes, which did not demonstrate that the improvement of treatment plans or the involvement of patients in treatment planning made a specific contribution to the results (Borckardt et al., 2007; Borckardt et al., 2011; Donat, 1998; Donat, 2003; Taxis, 2002). The contrasting findings of our

study compared with previous studies may be explained by the fact that, although the involvement of patients in the development of an individualized treatment plan is essential, the MWA comprises more. The cyclic nature of the MWA, with its articulation in five phases, emphasizes that implementation, evaluation and readjustment of the individualized plan are just as important as the formulation of goals and means. All impediments on the way towards the goals, including escalations and seclusion events, are objected to a critical review of the treatment process and the individualized plan. The need to emphasize the treatment process rather than the treatment plan is suggested earlier (Munkvold, Ellingsen, & Monteiro, 2007). The MWA provides a coherent framework for a multidisciplinary team to collaborate in the treatment process and allocates a prominent role to the coordinating nurse in the guidance of the patient and his/her family. This resembles the descriptions that Cleary et al. (2012) provide of 'mental health nurses' 'perceptions of good work'. The learning process, which takes place during the implementation of the MWA creates a sound base for the further development of mental health-care professionals, and meets the requirements formulated for practice development by Happell et al. (2003) and Cleary et al. (2010), which means that existing resources are utilized, the programme is built into mainstream activities, and that staff and patients' needs are incorporated. In the present study, all nurses were involved in the implementation strategy from the beginning, which made commitment very high; critical reflection and creative input from the nurses for the implementation of the MWA were encouraged to ensure that the approach really met the needs of both the nurses and patients.

The present study is not without its limitations. First, we did not formalize the implementation strategy of the MWA in a manual, which could maximize its reproducibility. Given the familiarity of the Dutch mental health professionals with the MWA and the existence of several manuals in Dutch on the topic (Coussens, 2010; Tiemens et al., 2010; Winkelaar, 2001), we assumed a basic knowledge of the MWA within the team. As we considered the creative input of all members of the multidisciplinary team an essential component of the implementation strategy, we gave only a global structure; however, this might not facilitate replication. A further limitation concerns the internal validity of our findings, given the quasi-experimental, non-equivalent control-group design of the study. The differences in the groups of patients admitted to the experimental and the control wards might limit the generalizability of our findings; for example, the mean length of stay on the experimental ward was approximately twice that on the control wards, which could imply that patients on the control wards had a higher risk of being secluded (Forquer et al., 1996). In the present study, however, a reduction of 50% in the length of stay on all wards during the study period was not associated with an increased use of seclusion. Although the differences between the experimental and control group are consistent over time, more research, preferably with a case-control design and including patients of both

sexes and with a variety of diagnoses, is needed to generalize our findings to various inpatient populations in mental health care.

Despite the aforementioned limitations, the present results demonstrate the capacity of a low cost intervention to improve the care on a ward for patients with psychoses and substance-use disorders. An additional effect of the institutional programme in the reduction in seclusion is less plausible, because the control wards did not show a statistically-significant change on the outcome measures. Focused on the goals of the individual patient, the MWA reinforces the patient-nurse dyad and their daily cooperation to realize these goals. The approach emphasizes the need for transparent descriptions of the activities of all participants, and thus gives patients, nurses, and other care staff clear expectations with regard to their roles. All of these features presumably contribute to the prevention of aggression and disruptive behavior among patients with severe mental illness, and thus reduce the use of coercive measures.

Conclusions

To the best of our knowledge, this is the first study to examine the effects of the MWA on the use of seclusion in an inpatient psychiatric population. Implementation of the MWA indicates a reduction in the use of seclusion on a ward for the intensive treatment of patients with psychoses and substance-use disorders.

Additional research is warranted to document the reduction in seclusion by the use of the MWA in other settings and for different groups of patients. Outside the Dutch linguistic region, a replication study of the MWA would benefit from a translation of Tiemens's (2010) manual, in which the principles are clearly explained and applied to mental health care. However, some flexibility to adapt the implementation strategy to local circumstances is advisable; involving the nurses, as well as the other participants of the multidisciplinary team, in the implementation process augments their commitment and promotes the applicability of the MWA in patient care. Future research should keep in mind that the lack of an effect in some earlier studies on seclusion-reduction programs might be due to insufficient attention to a structured approach of patient care, as provided by the MWA. Apart from studies of quantitative effects on seclusion rates, as presented in the present study, qualitative research is needed on the experiences of nurses with the MWA and on the satisfaction of patients and their family.

Chapter 4

Seclusion and the importance of contextual factors: An innovation project revisited

Abstract

Variation in seclusion rates between psychiatric facilities cannot be adequately explained by patient characteristics alone and there is a growing awareness of the influence of 'cultural' and staff factors on the use of seclusion. In this study, staff variables as well as seclusion parameters were investigated during the implementation of an innovation project, against the background of an institutional program to reduce the use of coercive measures. The results demonstrate the impact of confidence within the team, staffing level and communication with the patient on nurses' decisions on seclusion. The importance of the organizational context is further illustrated by the negative effects of organizational instability on nurses' attitudes and decision making with respect to seclusion, and on seclusion rates. A reduction in the use of seclusion was achieved after the implementation of the innovation project; however, during a period of organizational turmoil, the work engagement scores of staff decreased and the use of seclusion increased. The results of this study show the vulnerability of innovations within the continuously changing organizational context of mental health care.

Based on:

Boumans, C. E., Egger, J. I. M., Bouts, R.A. & Hutschemaekers, G. J. M. (2015). Seclusion and the importance of contextual factors: An innovation project revisited. *International Journal of Law and Psychiatry*, 41:1-11.

1. Introduction

1.1. Seclusion and facility effects

In mental health care, the ongoing use of seclusion and the slow pace of change is a source of concern (Keski-Valkama et al., 2007; Vruwink et al., 2012). Seclusion is defined as the enclosure of a patient in a special bare room, which has been approved for this purpose by the government, with the door locked (GGZ Nederland, 2012). Since the years 1990s, a wide variation in seclusion rates between psychiatric facilities has been identified (Betemps et al., 1993; Forquer et al., 1996; Korkeila et al., 2002; Way & Banks, 1990). Although international differences could be explained partly by methodological issues and differences in legal provisions (Janssen et al., 2008; Muir-Cochrane & Holmes, 2001; Steinert & Lepping, 2009; Steinert et al., 2010), on the national level facility effects still are an important source of variability, even if patient factors are accounted for (Husum et al., 2010; Janssen et al., 2013). Whereas 'objective' ward characteristics, such as ward size, bed occupancy rate, turn-over rate, census, shift and staffing level, do not have straightforward effects on the use of seclusion (Fisher, 1994; Janssen et al., 2007; Lay et al., 2011; Morrison & Lehane, 1995; Way et al., 1992), contextual factors, such as staff morale, staffing change, staff-staff conflict, positive teamwork, communication, team climate, ward culture and the provision of an effective, well-organized structure of rules and daily routines, have proved to be important determinants of conflict and the use of seclusion (Bowers, 2009; De Benedictis et al., 2011; Moran et al., 2009; Papadopoulos et al., 2012; Paterson, McIntosh, Wilkinson, McComish, & Smith, 2013). In a vignette study of decision making on seclusion, the effects of 'pure' patient characteristics on nurses' decisions to seclude were rather small, as compared to the impact of communication, confidence within the team and staffing level (Boumans et al., 2012). Several authors emphasize the need for further study to understand the effect of different treatment cultures on the use of coercion (Kaltiala-Heino, Korkeila, Tuohimäki, Tuori, & Lehtinen, 2000; Larue et al., 2009).

1.2. Staff training and attitudes toward seclusion

Emotional exhaustion and staff burn out are associated with justifications for the use of seclusion and higher containment rates (Bowers et al., 2011; Happell & Koehn, 2011). Strategies to improve staff morale, for example educational interventions designed to enhance the skill and competency of staff, tend to show a positive impact on job satisfaction, reduced stress, burnout and/or staff turnover (Gilbody et al., 2006), but also negative effects of staff training on these parameters are described (Jones, 2009). The effect of training on professionals' attitudes toward containment procedures has not been established: whereas some authors did not find any change (Bowers, Alexander, Simpson, Ryan, & Carr-Walker, 2004; Hahn et al., 2006;

Kontio et al., 2013), Mann-Poll, Smit, van Doeselaar, & Hutschemaekers (2013) demonstrated that, after a seclusion reduction program, professionals scored significantly higher on ethical concerns about using seclusion and on the option of 'more care' as an alternative to seclusion.

1.3. Present study

Changes in staff factors in relation to the use of seclusion were the focus of the current research. In addition to a large institutional program to reduce the use of seclusion and other coercive measures in a psychiatric hospital, an innovative way of working, called 'the Methodical Work Approach', was introduced at one ward; this ward, the experimental ward, was compared with a control group of three other wards within the same hospital. The background and a detailed description of this innovation project, as well as the reduction in the use of seclusion achieved after implementation of the MWA, are reported elsewhere (Boumans, Egger, Souren, & Hutschemaekers, 2014). In the present, explorative study, we investigated whether changes in staff variables at the experimental ward explain the reduction in the use of seclusion; therefore, we compared the experimental ward with the control wards with respect to staff variables as well as seclusion parameters: the incidence and duration of seclusion. The primary aim of the study was to investigate, with respect to staff variables, the additional effect of the innovation project at the experimental ward versus the effects of the institutional program introduced at all wards. The research question was whether the innovation project contributed to a change in attitudes toward seclusion and/or decision making on seclusion and/or an increase in work engagement of the nurses of the experimental ward, as compared with the nurses of the control wards.

By coincidence, an unexpected freeze on recruitment and a period of organizational turmoil offered us the opportunity to investigate the interfering effect of organizational factors on the institutional program and the innovation project. Thus, the secondary aim of the study became to evaluate the changes in nurses' attitudes toward seclusion and/or decision making on seclusion and/or work engagement, as well as the changes in the actual use of seclusion during the period of organizational turmoil. The secondary research questions were whether the organizational event had any effect on staff variables and/or the use of seclusion, and whether such an effect differed between the experimental and control wards.

2. Methods

2.1. Study site and participants

2.1.1. The Vincent van Gogh hospital

The data on which the study is based were collected in the psychiatric hospital Vincent van Gogh in Venray, the Netherlands. This public psychiatric hospital with over 900 beds offers outpatient and semirural services as well as inpatient treatment, to adolescent, adult and elderly patients with a broad spectrum of psychiatric disorders and/or substance abuse disorders. Eighteen beds are reserved for forensic psychiatric treatment with a medium security level. Crisis management, short term treatment, long-term treatment and (training for) sheltered housing are available; the average length of stay during the study period was 901-1269 days for the long stay departments and 49-57 days for the short term wards. For its assigned geographic region, the hospital has a commitment to receive and treat all patients referred for an involuntary admission under the Dutch Mental Health Act. Inpatient treatment is continued until adequate risk reduction has been achieved. Patients transferred from a high security forensic hospital to the forensic psychiatric ward for rehabilitation can be referred to the high security forensic hospital in case of non-compliance; otherwise, transfer of a patient with a non-forensic legal status to a high security forensic hospital following an extreme violent incident is very exceptional.

The four wards selected for this study constituted the section of the hospital with the highest level of security. At these closed wards with seclusion facilities, intensive treatment was offered to adult patients with very severe behavior disturbances, resulting from (a combination of) bipolar or psychotic disorders, emotional disorders, substance-use disorders, personality disorders and intellectual disabilities. In this study, the experimental ward (21 beds) was compared with a control group consisting of the three other wards (together 45 beds). All nurses working with a permanent contract on one of the four wards were invited to participate in the study. At the start in 2008 and during two years after, the nurses were invited to answer a survey every half year, yielding measurements at five time points. Anonymity was guaranteed, but participants were asked to note their age, gender, years of experience in secluding patients, frequency of participation in the seclusion process and the ward at which they worked. The study was conducted in accordance with the declaration of Helsinki and was approved by the Institutional Review Board. All four ward teams consented to participate in the study.

2.1.2. Legislation and policy on coercive measures

In the Netherlands, under the Dutch Mental Health Act of 1994, the use of specific measures is permitted in an emergency situation or as part of enforced treatment of patients suffering from a psychiatric disorder who endanger themselves and/or other

persons. These measures include seclusion (the enclosure of a patient in a special bare room, which has been approved for this purpose by the government, with the door locked), mechanical restraint (the restriction of movement of a patient by mechanical means), enforced medication (the administration of medication to a resisting patient) and enforced feeding (the administration of fluids and/of food to a resisting patient); as an alternative to seclusion, a further measure can be used: the enclosure in a special 'low stimulus' room, which is not the own bedroom (GGZ Nederland, 2012). In the Vincent van Gogh hospital, such a 'low stimulus room', also called 'the quiet room' had an adjacent private bathroom, and a few personal possessions were allowed to bring in, according to the level of self control of the patient. Although the enclosure of a patient in a 'quiet room' may be a somewhat milder coercive measure, it is not very different from seclusion.

Coercive measures can be used exclusively as a last resort to prevent imminent harm to self or others, when there are no alternative options left to ensure the safety of the patient and other persons. The use of all coercive interventions have to be registered and reported to the Dutch Inspectorate. A local protocol for the use of these measures is obligatory for all psychiatric facilities. In the Vincent van Gogh hospital, the version of this protocol dating from 1996 was renewed in 2006, after the National Mental Health Organization formulated the ambition to reduce the use of seclusion with 10% each year. The protocol was adjusted again in January 2010 to facilitate more stringent reporting obligations. The criteria for the use of coercive measures were unchanged. A committee within the hospital supervises the use of the coercive measures.

2.1.3. The institutional program to reduce the use of coercive measures

In 2006, the hospital started to participate in a nation wide program aimed at the reduction of the use of seclusion and restraint in psychiatric facilities. Grants were allocated by the Dutch government to hospitals, provided that they had a specific plan how to reduce the use of coercive measures; other criteria were developing psychiatric intensive care, gathering reliable data on coercive measures, and enhancing expertise of staff. Although methodological problems hinder international comparison of the use of coercive measures, seclusion rates as well as the use of mechanical restraint were reported to be relative high in the Netherlands, whereas forced medication was applied infrequently (Janssen et al., 2011; Steinert et al., 2010). For this reason, priority was given to the reduction of seclusion and mechanical restraint.

In the Vincent van Gogh hospital, the use of mechanical restraints was restricted to the wards for the elderly patients. At the wards which participated in this study, mechanical restraints were not used and the efforts were directed at the practice of enclosing patients in a seclusion room or quiet room. As the safety of patients and

staff on the ward is the rationale behind such practices, a reduction in the use of seclusion together with a decrease in patient and/of staff safety would be a questionable result. Therefore, records on patient and staff safety were included in this study.

The institutional program started with education on the negative effects of coercive measures and information to all ward teams about their specific use of these measures. 'Ambassadors' from within the teams were appointed to discuss the use of coercive measures with their colleagues and to help stimulate changes in attitudes and practices. Teams were encouraged and supported to develop their own procedures to improve their practices, for example using instruments as the Crisis Monitor. A training in the management of verbal aggression as well as a training in the management of physical aggression were available to all employees. The ambassadors gathered frequently with the program manager to evaluate the progress in their teams and to exchange information and ideas. The program manager visited the teams to present data of their use of coercive measures and reflect with the teams on changes.

2.1.4. The Methodical Work Approach

In addition to the institutional program, at the experimental ward, with high seclusion rates, an innovation project was started. Treatment planning and evaluation were reorganized according to the principles of the MWA, which is a systematic, transparent, and goal-driven way of working with cyclic evaluation and adjustment of the working process (Boumans et al., 2014). The treatment plan was based on life domains: daily living activities; social, financial, sexual, psychiatric and somatic problems; substance-use disorders and 'existential questions'. Problems, goals and means were specified per life domain. By appointing a prominent role to the coordinating nurse, the involvement of the patient along with the family was strengthened. The coordinating nurse helped the patient and family prepare for a treatment planning session, by assessing and discussing the problems and strengths of the patient per life domain and proposing goals for specific life domains. The multidisciplinary team then met with the patient and family to outline the short- and long-term goals and the means to reach these. All decisions were recorded in the treatment plan and the nursing care plan. During the implementation of the plans, progress was regularly evaluated and if necessary, adjustments to the plan were made. The systematic and transparent procedure structured the treatment process. For inpatients with severe mental illness such an individualized plan added to the predictability of their - often involuntary – admission and offered them a clear outlook on their goals and the way they could cooperate with the team to achieve these goals. Well-defined plans also gave the nursing team guidance in their work with the patients and strengthened the confidence in one self and in each other. By the

emphasis on cyclic evaluation the MWA promoted critical reflection on the results and a systematic analysis of possible causes of delay. The goal-driven character of the MWA implied that - for patients with a known risk of being involved in seclusion - the individualized plan should include means to prevent and contain dangerous behavior. Moreover, any interruption of the treatment process by an escalation and/or a seclusion event required a critical analysis of the causes of the event and a search for alternative means, in order to improve the individualized plan.

2.1.5. Freeze of recruitment

At the 1th of July 2010, without any announcement in advance, a freeze on recruitment was imposed on all departments of the hospital. Annual employee contracts were not renewed and once vacated, staff positions were left open. Even pregnant employees could not be replaced temporarily. At the wards participating in the study, the ending of fixed-term contracts as well as the incidence of pregnancy affected principally the nursing staff, not the other professionals, and this resulted in a smaller pool of nurses to roster the schedules. As a minimum number of nurses per shift was required to guarantee the safety on the wards, nurses were asked to work extra hours and to postpone their holidays. More than usual, nurses had to assist at other wards to remedy shortages. Thus, the second half of 2010 was characterized by organizational turmoil.

A chronological overview of the study is presented in Figure 1. Baseline data on seclusion were collected from the second quarter of 2008 (2008-02) onwards, measurements of staff variables started at the end of the year 2008. The MWA was introduced in the experimental team in the first half of 2009. The study period is divided in two parts: a period of relative organizational stability, from the second quarter of 2008 to the second quarter of 2010 (2008-02 – 2010-02) including the first four measurements (T1-T4), and a period of organizational turmoil, the third and last quarter of 2010 (2010-03 – 2010-04), starting just after the fourth measurement (T4) and ending with the fifth measurement (T5). Changes in attitudes, decision making, seclusion practices and/or work engagement which occurred in the first period (T1-T4) at the experimental ward as well as the control wards, can be attributed to a common factor: the institutional program on coercive measures; changes which occurred only or more pronounced at the experimental ward, would rather be an effect of the innovation project. Changes at all participating wards in the last period (T4-T5) can be related to the interference of the recruitment freeze with the institutional program; for changes which occurred only or more pronounced at the experimental ward, an effect of the interference of the recruitment freeze with the innovation project is plausible.

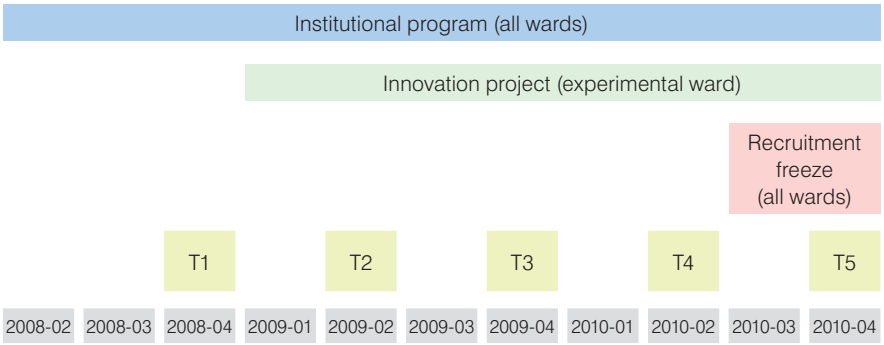

Figure 1 Chronological overview of the study

Type and duration of interventions are indicated in the timeline. The study period was divided in eleven quarters of a year (2008-02, … 2010-04). Staff parameters were measured at five time points (T1, … T5).

2.2. Instruments

2.2.1. PATS-Q

The first measure was the 'Professionals' Attitudes Toward Seclusion Questionnaire', the PATS-Q (Van Doeselaar et al., 2008). This questionnaire consisted of three parts, with a total of eight subscales. Part I was formed by 14 statements on the different functions of seclusion: as a form of treatment, as a necessary evil and as having an unjustifiable impact on patients. By factor analysis two subscales were constructed: 'ethics' and 'confidence in seclusion'. In part II, the respondents were asked about 17 possible causes of seclusion, divided into the subscales 'threat', 'treatment' and 'culture on the ward'. Part III offered a list of 12 alternatives to seclusion, divided into the subscales 'better care', 'other care' and 'more care'. Respondents were asked to rate statements on a 4-point Likert scale for the extent of their agreement.

2.2.2. Vignettes

A second survey consisted of 16 vignettes of theoretical patients in an imaginary situation at the ward (Boumans et al., 2012). Participants were asked to indicate on a 9-point Likert scale to what extent they certainly would or would not proceed to seclude the patient. Their scores on this scale were called 'tendency to seclude'. The vignettes were all built on the same pattern, but differed from each other by one or more variables concerning either the patient or the situation at the ward: main diagnosis (schizophrenia, bipolar disorder manic or depressive, personality disorder), severity of threat (imminent or actual dangerous behavior), target of threat (focused on the patient, other persons or materials), approachability of the patient (whether there was a good or hardly any possibility to communicate with the patient), seclusion

history (whether the patient was previously separated or not), patient network (whether or not a supportive network), perceived confidence in colleagues within the team (whether good or low to moderate confidence) and the staffing level at that time (dayshift with sufficient staff = high, dayshift with insufficient staff = moderate, evening or weekend shift = low).

All vignette variables were found to contribute significantly to decision making on seclusion and the effect sizes were estimated in a multilevel regression analysis (Boumans et al., 2012). In the current research, we investigated any changes during the study period in the tendency to seclude of the respondents, and in the ranking of the eight vignette variables with respect to their impact on the decisions to seclude.

2.2.3. UWES-9

The third survey measured work engagement, which is defined as a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2006). Work Engagement was measured with the 9-item version of the Utrecht Work Engagement Scale, the UWES-9 (Schaufeli & Bakker, 2003; Schaufeli et al., 2006). The three subscales, vigor, dedication and absorption, were each assessed by 3 items, scored on a 7-point frequency rating scale ranging from 0 (never) to 6 (always). An example of the assessment of vigor is 'At my work, I feel bursting with energy', for dedication 'I am enthusiastic about my job' and for absorption 'I am immersed in my work'. The 'total UWES-9' score is the mean of scores on the three subscales.

2.2.4. Argus

Data on seclusion and on the use of the quiet room were extracted from the electronic registration system for monitoring all coercive measures, named 'Argus' (GGZ Nederland, 2012; Janssen et al., 2011). This electronic registration system was operational in the Vincent van Gogh hospital by the end of 2008. The prior registration data on paper were introduced in the Argus system by hand. For research purposes, the data from this registration system were available in quarterly tallies. We used the incidence (the number of incidents of seclusion or of the use of the quiet room) and the duration (the total number of hours patients spent in seclusion or locked in the quiet room).

2.2.5. Safety incidents

Data on patient and staff safety were available from three sources: reports on 'patient safety incidents', reports on 'incidents of violence and shocking events' and the hospital register of suicides. From the register of patient safety incidents, all reports with relevance to the use of seclusion were collected: reports of attempted suicide, self-injury, physical aggression, threat, vandalism, fire and sexual assault. Incidents

were reported by staff, who marked one or more categories of incident type and supplied, among other things, the date and a description of the event. All reports were read by the first author, to encode events with more than one incident type into the most serious category: a report with self-injury and attempted suicide was encoded as attempted suicide; in case of a report with a combination of physical aggression, threat and/or vandalism, priority was given to physical aggression over threat and threat over vandalism. Aggression incidents were divided in events with aggression directed at staff and events with aggression directed at other patients. Aggression among patients could be reported either from the perspective of the aggressor or from the perspective of the victim or both. If two reports concerned the same event, described from both perspectives, they were merged. Data of suicides were extracted from the separate register of suicides.

In contrast to the reports on patient safety, the 'incidents of violence and shocking events' were reported from the perspective of staff safety and well-being. These records were available with detailed information on the manifestation of the aggression (verbal, physical, threat, sexual assault) in case of an incident of violence; shocking events could be reported as fire or the confrontation with self-injury, attempted suicide, sudden death or suicide of a patient.

2.3. Data-analysis

2.3.1. Preparation of the dataset

As the web-based survey could not be completed without answering every question, missing data were only due to staff turn-over and non-response at one or more time points. In order to get the most comprehensive view of the staff processes, we used as much of the data as possible, by combining the answers of nurses who missed one or more measurements. For example, the answers of a nurse who missed the fourth and fifth time points were combined with the answers of a nurse of the same ward who missed the first time points, creating one complete case. At each ward, incomplete responders were matched by their personal characteristics: age, gender, frequency of participation in the seclusion process, years of experience in secluding patients. These four available matching criteria were prioritized on the base of their known influence on attitudes toward seclusion and on work engagement respectively. In studies of attitudes toward coercive measures, females showed less approval of seclusion than males and approval rates of seclusion increased with age (Bowers et al., 2007; Muir-Cochrane, Bowers, & Jeffery, 2009; Whittington et al., 2009). However, the relationship between age and approval of coercive measures was not straightforward. Staff had a consistent tendency to approve of techniques once they had employed them in their practice and the more professionals were personally involved in seclusion, the more they believed in it (Van Doeselaar et al., 2008; Whittington et al., 2009). Mann-Poll et al. (2011) found that frequency of seclusion participation and

- to a lesser extent - years of seclusion experience were positively related with the tendency to seclude. The rater characteristics age and gender did not significantly contribute to the model (Mann-Poll et al., 2011). As for work engagement, the weak correlations found for age and gender were considered to be without practical consequences (Schaufeli et al., 2006). On the base of these results, the order of matching criteria in the present study was formed by the relevance for the judgment on seclusion: 1) frequency of participation in the seclusion process; 2) years of experience in secluding patients; 3) gender; 4) age.

Eight nurses of the experimental ward and 14 nurses of the control wards answered the web-based survey at all five time points. Datasets of four or less time points were available of 17 nurses of the experimental ward and 46 nurses of the control wards. For each of the four wards separately, the data of responders with missing time points were completed with the data of the best matching incomplete responding colleague of the same ward. Then, the data of the three wards participating as control group, were aggregated. These procedure resulted in 14 complete sets of data for the experimental ward and 30 complete datasets for the control wards. Because of the small number of cases per group, the normality of the variables was tested and was found to be acceptable; by comparison of the variance-covariance matrices, an acceptable equality of variables was determined.

2.3.2. Statistical analyses

Repeated-measures analyses of variance (ANOVA's) were used for each subscale of the three instruments, with 'time' and the interaction of 'time x group' as the within subject variables. By using contrasts of the first four time points and the last two time points, changes were tested during the period of relative organizational stability (T1-T4) and the period of organizational turmoil (T4-T5) respectively.

As for the decision making on seclusion, the ranking of the relative weight of the eight vignette variables was evaluated. Univariate analyses of variance were performed for the data of T1, T4 and T5 to determine the partial eta squared of each variable. Also the interaction of group (experimental ward versus the control wards) and each of the variables was tested. Due to a dependence of data, as each participant assessed all sixteen vignettes, no inference about 'absolute' effect sizes was made; the partial eta squared of the variables were only used to compare the impact of the vignette variables relative to each other.

All analyses were conducted with SPSS/PASW Statistics version 18.

3. Results

3.1. Participants

Response rates at the start were 95% (20 of 21) at the experimental ward and 74 % (40 of 54) at the control wards; by the end response rates were 74% (14 of 19) and 75% (36 of 48) respectively. The characteristics of the participants are displayed in Table 1. The experimental ward had a larger percentage of male nurses; in both groups, the percentage of female nurses increased in time. At all participating wards, 40-60% of the nurses had more than 5 years of experience in seclusion and the frequency of participation in seclusion decreased during the study period.

3.2. Staff variables

Repeated measures analyses of variance were performed at the mean scores on the three instruments, for the experimental ward as well as the control wards. The results are presented in Table 2. In the period of relative organizational stability (T1-T4), the only statistically significant change found was an effect of time ($p = 0.011$) at the scale Culture of the PATS-Q, without a differential effect between the groups; thus the nurses of both groups showed an increased awareness of the role of the prevailing culture on the ward as a cause of seclusion: the mean scores at the experimental ward increased from 2.5 (SD 0.5) to 2.9 (SD 0.5), at the control wards from 2.6 (SD 0.8) to 2.8 (SD 0.5). In the period of organizational turmoil (T4-T5) the scores of both groups on the scale Culture decreased ($p = 0.041$): at the experimental ward to 2.6 (SD 0.6) and at the control wards to 2.5 (SD 0.6). At the same time the tendency to seclude on the vignettes increased ($p = 0.006$), starting at T4 with 4.4 (SD 1.5) for both groups and rising at T5 to 5.0 (SD 1.1) at the experimental ward and 5.1 (SD 1.5) for the control wards. On the UWES-9, during the period of organizational stability no statistically significant changes were found. However, in the period of organizational turmoil there was an effect of time on all subscales (vigor: $p = 0.002$, dedication: $p = 0.000$, absorption: $p = 0.031$) and the total UWES-9 score ($p = 0.002$); at the experimental wards the means scores for the total UWES-9 decreased from 4.6 (SD 0.6) at T4 to 3.8 (SD 1.1) at T5, at the control wards from 4.7 (SD 0.9) to 4.6 (SD 1.0). Also an effect of the interaction of group x time was found (vigor: $p = 0.028$, dedication: $p = 0.014$, absorption: $p = 0.010$, total UWES-9: $p = 0.009$); the nurses of the experimental ward indicated a more pronounced decrease in work engagement than the nurses of the control wards. A graphic illustration of the significant changes at the three measures is presented in Figure 2.

Table 1 Characteristics of the participants

		Experimental ward				Control wards			
Characteristic		N start (%)		N end (%)		N start (%)		N end (%)	
Gender	Male	13	(65%)	8	(57%)	21	(53%)	13	(36%)
	Female	7	(35%)	6	(43%)	19	(48%)	23	(64%)
Age group	20-29 years	6	(30%)	3	(21%)	8	(20%)	12	(33%)
	30-29 years	1	(5%)	2	(14%)	8	(20%)	9	(25%)
	40-49 years	8	(40%)	3	(21%)	10	(25%)	7	(19%)
	≥ 50 years	5	(25%)	6	(43%)	14	(35%)	8	(22%)
Years of experience	None	0	(0%)	0	(0%)	1	(3%)	1	(3%)
in seclusion	<1 year	5	(25%)	4	(29%)	7	(18%)	9	(25%)
	1-2 years	2	(10%)	1	(7%)	2	(5%)	3	(8%)
	2-5 years	4	(20%)	0	(0%)	5	(13%)	7	(19%)
	5-10 years	1	(5%)	4	(29%)	9	(23%)	7	(19%)
	>10 years	8	(40%)	5	(36%)	16	(40%)	9	(25%)
Participation	Never	0	(0%)	0	(0%)	1	(3%)	1	(3%)
in seclusion	<1 per month	0	(0%)	4	(29%)	8	(20%)	11	(31%)
	1-4x per month	15	(75%)	10	(71%)	19	(48%)	20	(56%)
	2-7x per week	5	(25%)	0	(0%)	11	(28%)	4	(11%)
	> 1 per day	0	(0%)	0	(0%)	1	(3%)	0	(0%)

Frequency of participants' characteristics at the start (first time point T1) and the end (fifth time point T5) of the study. N = number. Percentages are given in parentheses.

3.3. Vignette variables

To investigate any changes in the relative importance of the vignette variables, the eta squared of each variable was determined in univariate analyses at T1, T4 and T5 (see Table 3). Although 'confidence within the team' and 'approachability of the patient' change places (the effect of approachability being slightly smaller at T1 and T4 and larger at T5), throughout the study period, confidence within the team, approachability and staffing level were the variables with the largest impact on the decision to seclude. The interaction of group x variable was not statistically significant for neither vignette variable, so the nurses of the experimental ward did not differ from the nurses of the control wards in their ranking of the impact of the vignette variables.

Table 2 Testing of changes on the PATS-Q, Vignettes and UWES-9

	Period T1-T4				Period T4-T5			
	time		time x group		time		time x group	
Measure	F	p	F	p	F	p	F	p
PATS-Q								
Ethics	2.20	ns	0.10	ns	1.53	ns	0.64	ns
Confidence in seclusion	0.86	ns	0.02	ns	0.19	ns	0.01	ns
Culture on the ward	7.00	0.011*	0.82	ns	4.45	0.041*	0.01	ns
Treatment	0.23	ns	0.17	ns	0.02	ns	0.10	ns
Threat	4.04	ns	0.05	ns	3.81	ns	0.21	ns
Better care	1.11	ns	0.59	ns	0.45	ns	0.69	ns
Other care	4.02	ns	2.69	ns	0.00	ns	1.55	ns
More care	0.19	ns	0.57	ns	0.06	ns	0.01	ns
Vignettes								
Tendency to seclude	1.41	ns	0.86	ns	8.36	0.006**	0.13	ns
UWES-9								
Vigor	0.74	ns	0.36	ns	11.05	0.002**	5.19	0.028*
Dedication	2.32	ns	2.32	ns	15.16	0.000**	6.53	0.014*
Absorption	1.37	ns	0.18	ns	4.96	0.031*	7.38	0.010*
UWES-9 total score	2.16	ns	1.09	ns	11.45	0.002**	7.45	0.009**

Results of the repeated-measures analyses of variance (ANOVAs) for each subscale of the Professionals' Attitudes Toward Seclusion Questionnaire (PATS-Q), vignettes and the 9-item version of the Utrecht Work Engagement Scale (UWES-9). By using contrasts for the first four time points and for the last two time points, changes were tested for the period of relative organizational stability (T1-T4) and the period of organizational turmoil (T4-T5) respectively. Presented are the within subject effects of 'time' and the interaction of 'time x group' (revealing any differential effects for the experimental ward versus the control wards). p indicates the level of significance of the F-ratio; * = $p < 0.05$; ** = $p < 0.01$; ns = not significant.

Table 3 Relative effects of the vignette variables on the tendency to seclude at three time points

	T1		T4		T5	
Vignette variable	η^2	p	η^2	p	η^2	p
Confidence within team	0.084	0.000**	0.060	0.000**	0.057	0.000**
Approachability	0.052	0.000**	0.051	0.000**	0.101	0.000**
Staffing level	0.039	0.000**	0.041	0.000**	0.033	0.000**
Target of threat	0.018	0.001**	0.025	0.000**	0.009	0.041*
Severity of threat	0.014	0.002**	0.004	ns	0.008	0.020*
Seclusion history	0.010	0.009**	0.014	0.002**	0.013	0.003**
Patient network	0.007	0.024*	0.003	ns	0.003	ns
Diagnosis	0.006	ns	0.006	ns	0.006	ns

η^2 = Partial eta squared, resulting from univariate analyses of variance performed for each of the vignette variables with the data of the time points T1, T4 and T5. p indicates the level of significance; * = $p < 0.05$; ** = $p < 0.01$; ns = not significant.

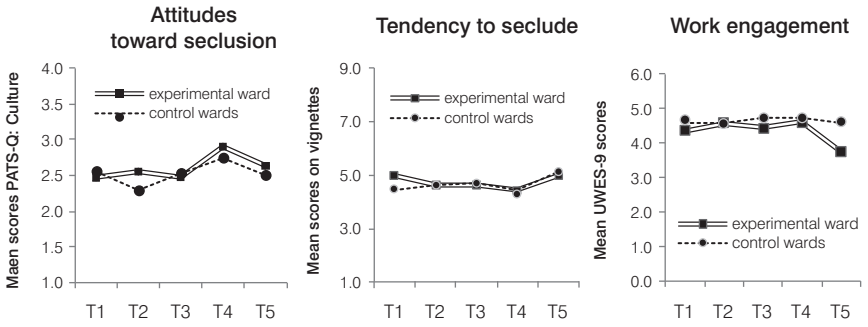

Figure 2 Changes in staff variables

PATS-Q = Professionals Attitude Toward Seclusion Questionnaire. Scores on the PATS-Q subscale 'culture' increased ($p < 0.05$) in the period T1-T4, and decreased ($p < 0.05$) in the period T4-T5, without a differential effect between the wards. The tendency to seclude on the vignettes did not change in the period T1-T4 and increased in the period T4-T5 ($p < 0.01$) at all participating wards. The work engagement of the nurses did not change in the period T1-T4 and decreased in the period T4-T5 ($p < 0.01$), which was more pronounced at the experimental ward than at the control wards ($p < 0.01$).

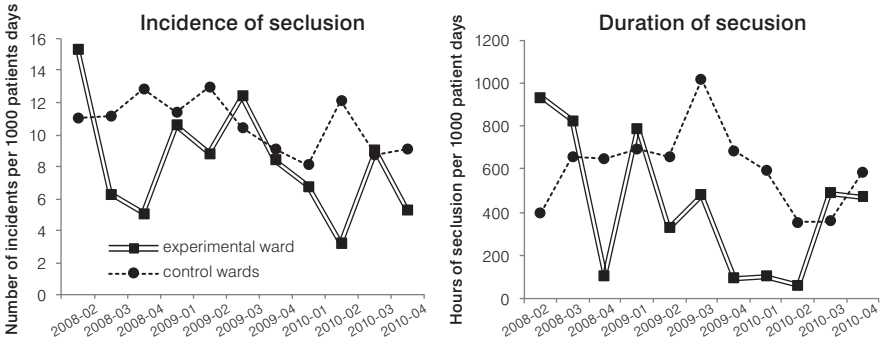

Figure 3 Incidence and duration of seclusion

For each quarter of the study period (2008-02, ….2010-04), the number of incidents of seclusion and the total hours of seclusion per 1000 patient days are represented graphically, for the experimental ward and for the control wards separately. The third and fourth quarter of 2010 (2010-03 and 2010-04) were characterized by organizational turmoil.

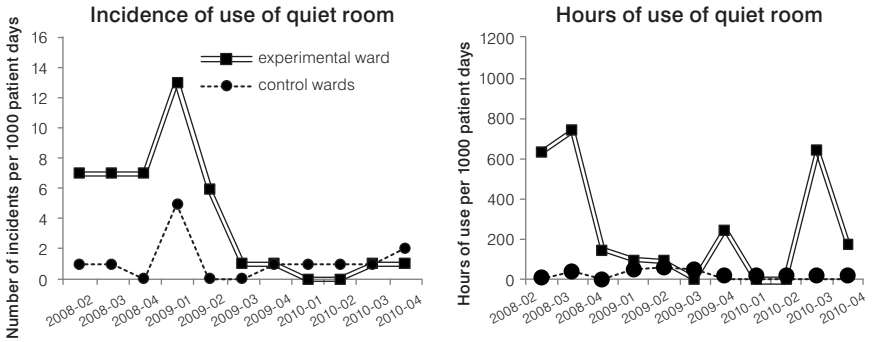

Figure 4 Incidence and duration of use of the quiet room

For each quarter of the study period (2008-02, ….2010-04), the number of incidents of use of the quiet room and the total hours of use of the quiet room per 1000 patient days are represented graphically, for the experimental ward and for the control wards separately. The third and fourth quarter of 2010 (2010-03 and 2010-04) were characterized by organizational turmoil.

3.4. Seclusion and quiet room parameters

The incidence and duration of seclusion are presented in Figure 3. In the period of organizational stability (2008-02 – 2010-02), the experimental ward achieved a more pronounced reduction of the incidence and the duration of seclusion than the control wards. In the period of organizational turmoil (2010-03 – 2010-04), the number of

seclusion incidents increased at the experimental ward, not at the control wards, and the duration increased in both groups; compared with the data of the second quarter of 2010, in the third quarter of 2010 a 5-fold increase of the total hours of seclusion was seen at the experimental ward and a 2-fold increase at the control wards.

The incidence and duration of the use of the quiet room are presented in Figure 4. At the start of the study, the use of the quiet room was much higher at the experimental ward than at the control wards, where the use of the quiet room was low throughout the study period. After implementation of the MWA at the experimental ward, the incidence as well as the duration of the use of the quiet room decreased to the level of the control wards, except for the last quarter of 2009. In the period of organizational turmoil, the use of the quiet room at the experimental ward increased again, with a duration in the third quarter of 2010 comparable to that at the start.

3.5 Patient and staff safety

During the study period, 129 patient safety incidents were reported, 50 at the experimental ward and 79 at the control wards, and separately, two suicides were recorded, one at the experimental ward and one at the control wards. Of the 50 patient safety incidents reported at the experimental ward, 37 concerned aggression toward staff, 10 aggression directed at other patients, 2 self-destructive behavior and 1 arson; at the control wards the distribution of patient safety incidents was 39 concerning aggression toward staff, 2 aggression directed at other patients, 34 self-destructive behavior and 4 arson. Of a total of 161 reported incidents of violence or shocking events, three records were incompletely filled out. Staff of the experimental ward reported 35 incidents of violence and 3 shocking events, two of which concerned the same suicide event. Staff of the control wards reported 113 incidents of violence and 7 shocking events, 6 concerning attempted suicide and one concerning a completed suicide.

In Figure 5, for each quarter of the study period, patient-staff aggression reported as either patient safety incidents or incidents of violence are presented in two separate graphs. Whereas the columns of the patient safety incidents are composed of reports of physical aggression, threat, vandalism and sexual assault, the columns of the incidents of violence are composed of physical aggression, threat, verbal aggression and sexual assault. For the experimental ward, 37 patient safety incidents of aggression directed at staff and 35 incidents of violence were reported vs. 39 patient safety incidents of aggression directed at staff and 113 incidents of violence at the control wards (with more than twice as much beds as the experimental ward). During the implementation phase of the MWA at the experimental ward, the average number of patient-staff aggression reports was 2.3 for safety incidents and 2.6 for incidents of violence per quarter, with an exceptional number of 8 patient safety incidents in the first quarter of 2010. In the last two quarters of the study, the average

number was 8.0 for safety incidents and 6.0 for incidents of violence. At the control wards during the period of relative organizational stability, the average number of patient-staff aggression reports was 3.7 for patient safety incidents and 9.3 for incidents of violence, with a more than average number of incidents of violence during the first two quarters of 2009 (19 and 18 respectively). During the period of organizational turmoil the average number was 3.0 for patient safety incidents and 14.5 incidents of violence.

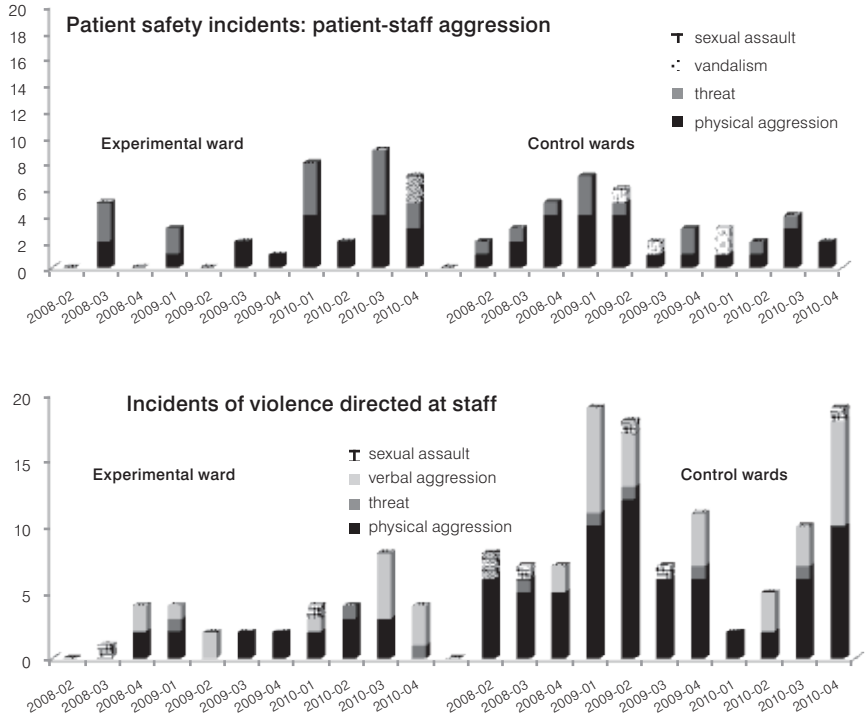

Figure 5 Reports of patient aggression directed at staff

For each quarter of the study period (2008-02, ….2010-04), data on patient-staff aggression are presented either as the number of reports of patient safety incidents (on top) or the number of reports of incidents of violence directed at staff (below). The records are presented for the experimental ward and the control wards separately.

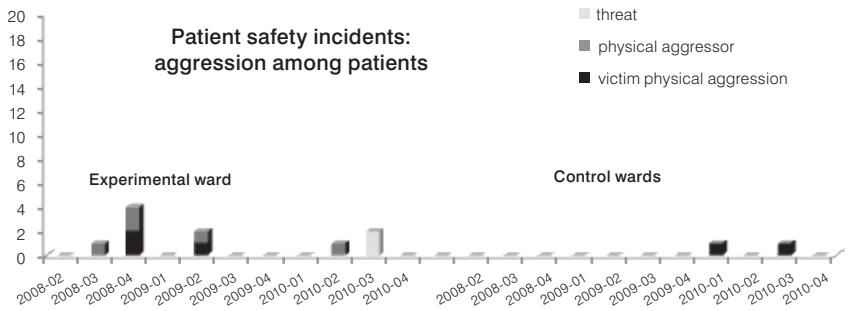

Figure 6 Reports of aggression among patients

For each quarter of the study period (2008-02, ….2010-04), data on patient – staff aggression are presented as the number of reports of patient safety incidents. Incidents could be reported from the perspective of the aggressor (threat or physical aggression) or from the perspective of the victim (physical aggression). The records are presented for the experimental ward and the control wards separately.

In Figure 6, the reports of safety incidents concerning aggression among patients are displayed. The columns are composed of reports of physical aggression or threat of one patient to another patient and reports of patients as a victim of aggression of another patient. The experimental ward reported more aggression incidents among patients (10) than the control wards (2), without any striking frequency changes in the course of the study period.

Figure 7 displays the reports of self-destructive behavior and arson. The reported self-destructive behavior of patients was lower at the experimental ward (2, and one suicide) than at the control wards (34, and one suicide); twenty-six of these reports of the control wards concerned the same patient. Apart from the large number of reports about this patient, especially in the fourth quarter of 2008, the frequency of self-destructive behavior was relative low at all wards during the study period. Arson was reported once at the experimental ward and four times at the control wards.

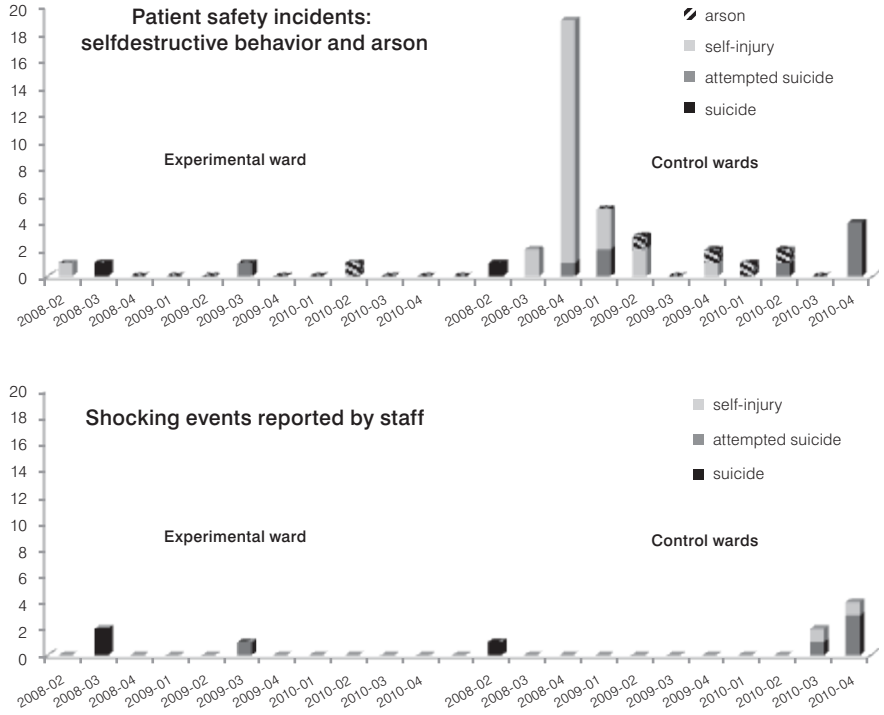

Figure 7 Reports of self-destructive behavior and arson

For each quarter of the study period (2008-02, ….2010-04), data on self-destructive behavior and arson are presented either as the number of reports of patient safety incidents (on top) or the number of reports of shocking events (below). The records are presented for the experimental ward and the control wards separately.

4. Discussion

In a two year-study with two different phases of organizational (in)stability, we analyzed staff and seclusion parameters, comparing the effects of an innovation project implemented at only one ward with the effects of an institutional coercion reduction program executed at all wards. As for attitudes toward and decision making on seclusion, changes were related to the specific organizational phase, without a differential effect between the experimental ward and the control wards; in the scores on work engagement, the experimental ward differed from the control wards during the period of organizational turmoil. These findings are discussed below in more detail and in conjunction with the found changes in seclusion rates and issues of patient and staff safety.

4.1. Changes without a differential effect between the wards

For the PATS-Q, changes were found on the scale 'Culture', which is based on the responses to the question: "To which extent play a role in seclusion: ward rules, command and control situation, expertise of nurses, communication with client, confidence in colleague, and number of nurses on duty." During the period of relative organizational stability, the scores of the nurses of all participating wards increased, indicating that the nurses were increasingly aware of the influence of contextual factors and their own role in the seclusion process. This was presumably a result of the institutional program, by which the discussion on seclusion and the search for alternatives was facilitated. During the period of organizational turmoil, the awareness of the influence of 'culture' on seclusion decreased. Whereas the questions of the PATS-Q are directed at *explicit* attitudes or opinions on seclusion, the vignettes are designed to obtain more insight in *implicit* decision making on seclusion. The ranking of the vignette variables was unchanged during the study period: confidence within the team, communication with the patient and staffing level remained the variables with the largest impact on the nurses' decisions to seclude. So, while at the implicit level of decision making on seclusion the importance of contextual factors was unremitting, the explicit awareness of the nurses of these influences on the seclusion process waxed and waned according to the (in)stability of the organizational context. Moreover, during the period of organizational turmoil, nurses not only showed a decreased awareness of their own role in decision making on seclusion, but also increased their tendency to seclude a patient in the virtual reality of the vignettes; this suggests that 'automatic' responses grew in importance at the expense of more conscious decision making.

4.2. Patient and staff safety

At none of the wards a consistent trend over time with respect to patient or staff safety incidents was found. At all wards, the average number of patient–staff aggression incidents was higher during the last two quarters of the study than in the previous period, but these numbers were not exceptional: similar rises were seen previous. By the interpretation of the data on patient and staff safety, one has to take into account the sampling method. During the study period, the current electronic integral patient-staff-safety register was not yet implemented and staff had a choice to report an aggression event either as a patient safety incident or as an incident of violence or both. Because patient safety incidents were recorded on the patient's name and incidents of violence on the staff member's name, the data could not be combined to trace double reports. Comparison of the two registers, with the presumption that a patient safety incident and an incident of violence reported at the same date and the same ward would concern a double report, revealed a remarkable change in reporting behavior of staff at all wards: in 2008 only 2 events were double

reported, in 2009 16 and in 2010 22. Such shifts in reporting choices, in addition to any – unknown - changes in readiness to report an incident, should prompt caution when interpreting the findings. This is also illustrated by the peak in self-destructive behavior in the last quarter of 2008 at the control wards, where the extreme behavior disturbances of just one client dominated the picture.

4.3. The innovation project in a phase of organizational stability

The implementation of the MWA at one of the wards resulted in a more pronounced reduction of the use of seclusion at this ward (Boumans et al., 2014) but it did not result in a differential effect on any of the staff variables measured. So, this study does not contribute to the understanding why the team of the experimental ward, after the introduction of the MWA, was successful in reducing its use of seclusion. Apparently, the added value of the innovation project did not consist of a change in how nurses think about seclusion, but how they work: the goal-directed and systematic working process of the MWA may have enabled them to guarantee the safety on the ward with a lesser use of seclusion. Even when there was an increase in patient-staff aggression incidents during the first quarter of 2010, it did not go hand in hand with a rise in seclusion rates. The staff was able to handle these events of patient aggression in an alternative way, while continuing their reduction of the use of seclusion.

Previous studies showed that interventions designed to enhance the skill and competency of staff had either a positive or a negative impact on job satisfaction, stress and burnout (Gilbody et al., 2006), but we did not find any effect of the intervention on work engagement.

4.4. Organizational turmoil and work engagement

During the period of organizational turmoil, hardly any changes occurred in the work engagement of the staff at the control wards, whereas the nurses at the experimental ward indicated a substantial decrease in vigor, dedication and absorption. In order to explain the differential effect on the two groups of an organization-wide freeze on recruitment, we examined the availability of staff for the teams, but did not find a substantial decrease in the fulltime equivalents per 1000 patient days. At all wards, the pressure on nurses to work extra hours and to assist in other teams was high. It was difficult to roster the schedules and nurses of other teams had to replace absent nurses. Frequently, at the start of a shift, staff was not sure whether the next shift would be complete. Studies on work environment and burnout in mental health staff demonstrated that not client severity but organization structure, culture, management process and perceived unfairness were important to job satisfaction and burnout (Lasalvia et al., 2009; Schulz, Greenley, & Brown, 1995). A tentative explanation for the loss of work engagement of staff from the experimental ward can be sought in

the frustration of the nurses, who – after working very hard to improve their working methods and to change seclusion practices - could not continue to work in accordance with their own new standards.

4.5. Organizational turmoil and seclusion

Although not exceptional, the relative high incidence of patient – staff aggression in the last two quarters of the study at all wards, could be interpreted as an indication that patients were reacting with agitation to the organizational turmoil. From the perspective of staff variables, the increased duration of seclusion at all participating wards during the period of organizational instability could possibly be explained by the *perception* of staffing levels as insufficient because of daily worries about schedules, and diminished confidence within the team due to frequent exchange of nurses with other teams, giving rise to feelings of insecurity and fear about the safety on the ward. In such a state of mind, the nurses might have been less prepared to end a seclusion episode and readmit a patient to the ward. At the experimental ward, these dynamics could have been aggravated by a complex interaction pattern: while the loss of work engagement interfered with the nurses' ability to communicate effectively with patients, an increase in dangerous and disruptive behavior of the patients affected staff attitudes adversely, and demoralization of staff caused patients to regress in their behavior and to act out. Whereas the staff thus far had succeeded to contain the aggressive behavior of the patients with alternative practices, during the organizational disruption they intensified their use of the seclusion room as well as the quiet room.

An association between organizational factors, staff factors and the use of seclusion has been found in previous studies: participants with higher scores for emotional exhaustion were significantly more likely to support the use of seclusion in specific situations (Happell & Koehn, 2011), staff perceptions of insufficient safety measures in the workplace were associated with greater use of seclusion (De Benedictis et al., 2011) and if the staff mix was perceived as insufficient because of a decrease in the usual number of male staff on duty and/or an increase in inexperienced or casual working staff, patients were found to be secluded earlier than they normally would have been (Wynaden et al., 2002). Bowers et al. (2011) investigated 136 acute psychiatric wards and identified two significantly distinct groups of wards: the larger of which had particularly good leadership, teamwork, structure, attitudes towards patients and low burnout; and the second smaller proportion which was poor on all variables and high on burnout. The better functioning cluster of wards had significantly lower rates of containment events. A linear model was suggested in which leadership influenced teamwork, teamwork structure; structure burnout; and burnout feelings about difficult patients (Bowers et al., 2011).

4.6. Limitations

Some limitations have to be acknowledged. Our study started two years after the introduction of the broad institutional coercion reduction program. Changes that had already taken place before the start of our data sampling, fall beyond the scope of this analysis. This may explain why we – unlike Mann-Poll et al. (2013) – did not find any changes on the subscale 'ethics' of the PATS-Q: a possible increase in ethical concerns about coercive measures as a result of the education about the negative effects of seclusion during the first years of the institutional program may have been missed by the current study.

Secondly, as no systematic data-collection concerning the severity of illness or the behavior of the patients was part of this study, the influence of any differences in patient population between the wards or changes in patient behavior in time could not be taken into account. Although it is plausible to suppose that the period of turmoil did affect the patients, resulting in an increase in anxiety and aggression and leading to more incidents that motivated the use of seclusion, this study is not conclusive of any effects of patient behavior or the interaction of staff and patient behavior on the use of seclusion.

A further limitation is the fact that this article describes the results of controlled as well as uncontrolled research. The need for adaptation of mental health services to continuously changing requirements challenges the need for stability to implement innovations and controlled experiments. The recruitment freeze and organizational turmoil in the last phase of the study were not intended and the consequences were not systematically investigated. The conclusions about the negative effects of such events on the organization and on the innovation project remain equivocal. However, serendipity provided us with data of the influence of interfering organizational factors on experiments; as scientific reports of such data are scarce, this study may contribute to a more comprehensive view on the complexity of innovation and research in present-day rapid changing mental health services.

5. Conclusions

An institutional program on coercive measures, with education, feedback and the appointment of 'ambassadors' from within the teams to stimulate changes in attitudes and practices, made staff more aware of the influence of the ward culture and their own role in the seclusion process. However, the role of this 'context awareness' may have been limited, as the reduction in the use of seclusion at the control wards was less pronounced than at the ward where also an innovation project was started. Thus, the positive influence of an organizational initiative on seclusion practices seems to have been modest. However, the negative effects of an

organizational event such as a freeze on recruitment were clearly demonstrated: in the subsequent period of organizational turmoil, at all participating wards nurses' tendency to seclude increased, automatic responses replaced conscious decision making on seclusion, and seclusion rates increased. At the ward where the MWA was implemented, the process of innovation was hampered, work engagement of staff decreased and nurses resorted to 'old' solutions of using seclusion. This study stresses the importance to invest in a stable context for teams to implement ánd conclude new developments.

Addendum: team reflexivity and the tendency to seclude

In addition to the staff parameters mentioned so far, a fourth staff variable was measured, namely 'team reflexivity'. The results with respect to this variable, however, finally did not contribute to the explanation of either the effect of the MWA on the prevention of seclusion or the negative consequences of organizational instability, and were, for the sake of legibility, not included in the publication reproduced in this chapter. As described in the introduction to this thesis, the concept of team reflexivity influenced our first hypotheses; for this reason our findings are discussed below.

Reflexivity was measured with the 'Shortlist Reflexivity in teams' developed by Schippers et al. (2007), consisting of two scales: evaluation/learning (seven items, e.g. 'We work out what we can learn from past activities.' 'We check whether our activities produced the expected results.' 'If things don't work out as planned, we consider what we can do about it.') and discussing processes (four items, e.g. 'The team often reviews its objectives.' 'The methods used by the team to get the job done are often discussed.'). In contrast to the other staff instruments in our study, which were based on personal judgements, the Shortlist Reflexivity in teams invites individual staff members to score the reflexive functioning of their team. Because of this team-based character of the instrument, we did not combine the data of the three control wards, but analyzed the data for the four participating teams separately.

To test our first hypothesis, repeated-measures analyses of variance (ANOVA's) were performed with 'time' and the interaction of 'time x group' as the within subject variables. By using contrasts of the first four time points and the last two time points, changes were tested during the period of relative organizational stability (T1–T4) and the period of organizational turmoil (T4–T5) respectively. To explore our second hypothesis, bivariate correlations between the mean team scores on reflexivity and the mean team tendency to seclude were calculated for all five time points. Significance testing was carried out one sided.

In Figure 8, the mean scores for evaluation/learning, discussing processes, mean reflexivity and tendency to seclude are presented for all four participating teams separately. This shows that the scores of team 1, at the experimental ward, on both subscales of team reflexivity were relative low at the start of our study and came in the range of the other teams at T3. After T3, team reflexivity declines in all teams but team 4. Team reflexivity in this team follows a reverse pattern: scores are highest at T1 and T5, with a dip at T3, but stay at a higher level than the scores of the other teams throughout the study period. The difference in pattern of change between team 4 and the other teams was (just) statistically significant, for evaluation/learning during T1-T4 ($p = 0.048$) and for discussing processes during T4-T5 ($p = 0.039$).

As for the tendency to seclude, only in the period T4-T5 a statistically significant change was found for time ($p = 0.003$): all four teams raised their scores. The inverse relation between team reflexivity and the team's tendency to seclude which we found at T1 (Boumans et al., 2012), was not confirmed at any of the later time points; bivariate correlation testing did not reveal any statistically significant findings.

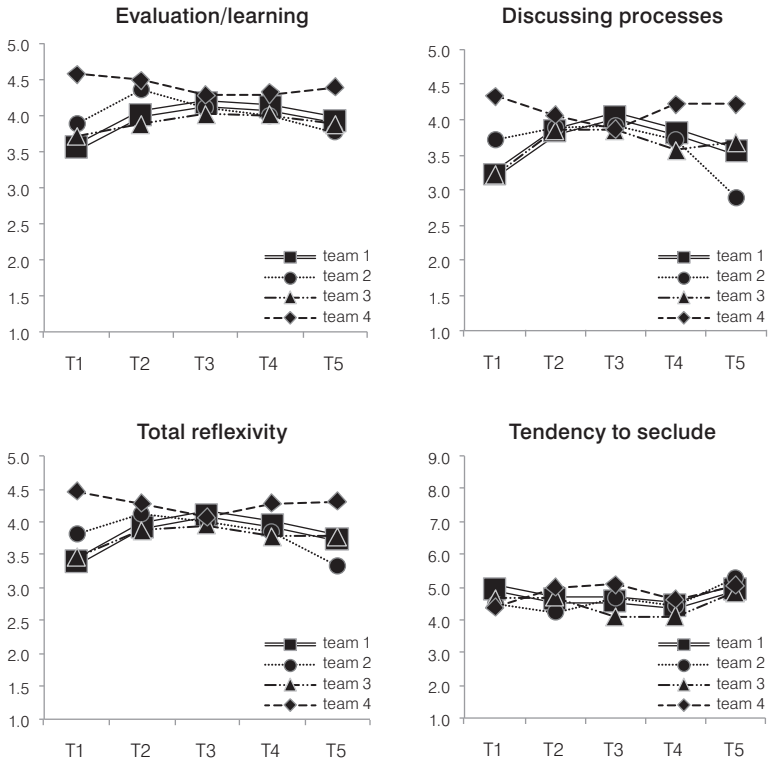

Figure 8 Team reflexivity and tendency to seclusion

For each of the four participating teams, the mean scores at 5 time points are presented for the subscales evaluation/learning and discussing processes of the Shortlist Reflexivity in teams; the mean reflexivity; as well as the mean team scores on the vignettes, expressed as the tendency to seclude. Team 1 implemented the MWA.

None of our hypotheses concerning team reflexivity was confirmed in this study. After the implementation of the MWA at the experimental ward, the team scores certainly increased, but the pattern of rise before and fall after T3 was not very different from that of two other teams which did not implement the MWA, so the growth in team reflexivity cannot be attributed to the MWA. One could think of favorable organization-wide circumstances fostering team reflexivity in the period of relative organizational stability, but such does not explain the decrease after time point T3, half a year before the freeze of recruitment, nor the reverse pattern in team 4. Not even the expectation that team reflexivity would have a negative correlation with a team's tendency to seclude was confirmed. So, in our study the concept of team reflexivity did not contribute to the explanation of the effect of the MWA on the prevention of seclusion.

Chapter 5

The Methodical Work Approach and the reduction in the use of seclusion: How did it work?

Abstract

The prevention of seclusion and other coercive measures has become a priority for mental health facilities, and numerous comprehensive programs to reduce the use of these containment procedures, have been developed. It is, however, poorly understood which interventions or elements of programs are effective and by which mechanisms or processes change is mediated. The present study explores the effects of an intervention by which a reduction in the use of seclusion was achieved. The intervention concerned a transformation of the treatment process, based on the principles of the Methodical Work Approach (MWA), at a ward for the intensive treatment of patients with psychoses and substance-use disorders. Changes in the working practice and team process were analyzed on the basis of case examples and team evaluation. The MWA appears to have provided a guidance for the multi-disciplinary team, the patient and the family to work together in a systematic and goal-directed way with cyclic evaluation and readjustment of the treatment and nurse care plan. Also implicit, positive changes were found in the team process: increased interdisciplinary collaboration, team cohesion, and professionalization. It is argued that the implicit or non-specific effects of an intervention to prevent seclusion may constitute a major contribution to the results and therefore merit further research.

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Introduction

Faced with the dangerous behavior of inpatients, the staff of mental health facilities sometimes resorts on the use of coercive measures, such as seclusion, which is the enclosure of a patient in a special bare room with the door locked. This practice has been intensively criticized (Bower, McCullough, & Timmons, 2003; Curie, 2005; Frueh et al., 2005; Hoekstra, Lendemeijer, & Jansen, 2004; Holmes, Kennedy, & Perron, 2004; Muralidharan & Fenton, 2006; Sailas & Fenton, 2000) and many efforts to reduce the use of seclusion have been established, with varying results (Fisher, 2003; Gaskin et al., 2007; Johnson, 2010; Scanlan, 2010; Stewart, Van der Merwe, Bowers, Simpson, & Jones, 2010). Often, the interpretation of the effects is problematic. This is mainly caused by the fact that these interventions were studied as part of extensive and comprehensive programs, which complicates the interpretation of the effects. Therefore, several authors have called for research into the relative effects of different program elements and into the mechanisms and processes that bring about change (Gaskin et al., 2007; Stewart et al., 2010; Taxis, 2002).

The intention of the present article is to contribute to this discussion, by an analysis of the background of an effective intervention, called the Methodical Work Approach (MWA) (Boumans et al., 2014). This is a systematic, transparent and goal-directed way of working, characterized by an emphasis on cyclic evaluation and readjustment of the working process. The MWA involves five phases: 1) translation of problems into goals, 2) search for means to realize the goals, 3) formulation of an individualized plan by matching specific means to individual needs and preferences, 4) implementation of the plan and 5) evaluation and readjustment (Boumans et al., 2014; Coussens, 2010; Tiemens et al., 2010). Whereas references in the international literature are scarce, the MWA has a prominent position in the education of Dutch and Flemish mental health professionals with numerous studies and publications in the Dutch language (Bruijns & Hofmans, 1984; De Bekker et al., 1990; Eriksson et al., 1993; Koekkoek, 2011; Koopman, 1983; Mostert & Kruijswijk Jansen, 1997; Pel-Littel & Spieker, 2010; Snellen, 2007; Winkelaar, 2001). The familiarity to care providers was one of the features which made the MWA convenient for introduction in a psychiatric hospital in the South-East of the Netherlands with high seclusion rates. At the ward which implemented the MWA, the use of seclusion by the staff decreased (Boumans et al., 2014). In the present paper, we analyze the changes at this ward after the implementation, guided by the question: how did it work? We study the MWA working practice in individual treatment trajectories as well as the team process during the implementation of the MWA, with the aim of identifying elements or factors which may have contributed to the reduced seclusion rates.

Aims and implementation of the Methodical Work Approach

The MWA was implemented at a closed ward with 21 beds and seclusion facilities, where intensive treatment was offered to patients with very severe mental illness, especially a combination of psychoses and substance-use disorders. Almost all patients were involuntarily admitted, and some of them had been in conflict with the law and/or been treated, prior to admission, in a forensic psychiatric setting. The patients were referred from other sections of the hospital because of dangerous behavior stemming from their combined disorders and non-response to previous treatment attempts. Illness-specific treatment guidelines had not been effective because of treatment-resistance and/or non-compliance; most patients did not see how they could actually benefit from cooperating with care providers. The staff frequently used seclusion to secure the safety on the ward. To change these practices, the treatment process has been reformed into a cyclic process in five phases, according to the principles of the MWA. A new format for the treatment plan and the nursing care plan has been developed, in which problems as well as strengths, goals and means are specified per life domain (psychiatric symptoms, substance-use disorders, daily living activities, social relations, financial situation, sexuality, physical health and existential questions). The involvement of the patient along with the family has been strengthened by appointing a prominent role to the coordinating nurse. The effects of the MWA have been studied by comparing this ward with a control group of three other wards within the same psychiatric hospital; in comparison with the control group, at the ward where the MWA was implemented a more pronounced reduction over time has been achieved for the number of incidents of seclusion as well as for the total of hours patients spent in the seclusion room (Boumans et al., 2014).

The working practice of the Methodical Work Approach: case examples

In the following, the working practice of the MWA is illustrated by four case examples of patients, who - at the time the MWA was introduced - had experienced seclusion of a long duration and/or were at high risk of being secluded again. A summary of each patient's treatment trajectory, subdivided in the phases of the MWA, is given in Table 1. (To preclude identification, personal details were modified).

Patient A

Patient A (male, 25 years) was diagnosed with schizophrenia and cannabis dependence, and was repeatedly admitted compulsory, after discontinuation of the antipsychotic

medication. Because of physical aggression associated with acoustic hallucinations and paranoid delusions, he had to be nursed in the seclusion room for 950 h during 2 months. After treatment with forced intramuscular medication (zuclopenthixol decanoate) he became more cooperative, but he continued to hear voices and he used cannabis everyday. He wished to live on his own and to have paid (sheltered) work, but at the ward he refused to participate in any activity. His family was disappointed in what they considered a lack of motivation of their relative and they were very concerned that he would relapse soon. They exemplified aggressive acts of the patient as well as apathetic behavior in relation to the use of illicit drugs. They wanted to receive the patient for a weekend stay on condition that he had not used drugs just before.

In the first treatment planning session, patient A had very clear goals—a house and a job, but- unlike his family—he did not have any insight in the barriers to reach these goals. Therefore, short term goals were suggested to start with, in order to reach the patient's long term goals. As he experienced his voices as a nuisance, he agreed on a goal in the domain Psychiatric symptoms, to diminish the burden of his voices and to prevent seclusion. The means to realize these goals were a change of zuclopenthixol decanoate into clozapine, executed and monitored by the psychiatrist and an illness self-management module, offered by the psychologist and one of the nurses. Although the patient saw a daily joint of cannabis as his way of life, he agreed upon a goal in the domain Substance-use disorders, to gain more insight into the effects of cannabis on his psychotic symptoms. He did not want to participate in daily activities except for fitness, so he was introduced to the fitness group. In the domain Social relations, the goal was to restore the relationship between the patient and his family. This was worked at by the social worker and the psychiatrist in psycho-educational sessions with the family. Goals, means and the responsible professionals for each activity were recorded in the treatment plan and the nursing care plan. Patient A participated weekly in the self-management sessions and the nurse kept her colleagues informed about the sessions, to promote a collective support for the patient's learning process. The patient started to score on a daily base the burden of his psychotic symptoms as well as the frequency and dose of his cannabis use and discussed the findings with his coordinating nurse. He cooperated in urine tests before a weekend leave to demonstrate his family that he was 'clean'.

At his first evaluation, the patient had gained more illness insight and he used the learned skills to cope with his voices, which were less intense but not absent, possibly because he still used cannabis now and then. Despite the negative urine tests before the weekend, he could not resist his craving after he had returned to the ward. He had started some sportive activities, but complained of a lack of initiative and energy and had also symptoms of a clozapine-induced metabolic syndrome. For the next period, the goal in the domain Substance-use disorders became 'getting

Table 1

Patient A	Patient B	Patient C	Patient D
translation of problems into goals: short term goals			
diminish burden of voices	diminish paranoia and anxiety	re-analysis of behavioral disturbances	learn to control aggressive impulses
prevent seclusion	safe ending of seclusion	reduce the need of seclusion	
increase insight in effects of cannabis	stabilization at the ward	diminish interpersonal conflicts	
restore relationship with family		prevent further weight loss	
translation of problems into goals: long term goals			
own house, job	'release' from hospital	proceed activities on hospital grounds	?
search for means to realize the goals and formulation of an individualized plan			
change antipsychotic into clozapine	exclusion of physical cause of emesis	cerebral CT-scan	behavioral analysis of aggression regulation
illness self-management	therapeutic blood levels of clozapine	add mood stabilizer	freedom of movement after taking olanzapine
monitoring cannabis effects, urine tests	predictable structure at the ward	increase frustration tolerance + social skills	and clean urine test on drugs
psycho-education to family		create 'time to eat'	
implementation of the plan			
monitoring clozapine by psychiatrist	physical examination: alcoholic gastritis?	CT-scan did not reveal changes	confrontation with positive amphetamine test
weekly sessions, psychologist/ nurse	1 hour observation after intake clozapine	start lithium by psychiatrist	escalation of violence, seclusion
nurse discusses effects of cannabis	monitoring blood levels by psychiatrist	individual skills training by psychologist	re-evaluation:
family sessions, social worker/ psychiatrist	participation in daily activities at the ward	accompaniment during meals by nurses	movement restriction to force abstinence

evaluation (and readjustment)			
voices less intense, not absent	paranoia and anxiety disappeared,	maniac symptoms disappeared	paranoia and aggression disappeared
improved skills to cope with illness	seclusion ended	weight stabilized	friendly and helpful, rather shy behavior
weekend stay, drug use afterwards	started in daytime activities	no progress in social skills	started in daytime activities
lack of energy and initiative		seclusion after new incident of arson	social skills were inadequate
symptoms of metabolic syndrome			
translation of new problems into goals			
get clean from cannabis	prevent psychosis and seclusion	diminish risk of conflicts	stabilize abstinence from drugs
increase energy and initiative	increase insight in effects of drugs + alcohol	restore contact with foster-brother	improve social skills
diminish risks of metabolic syndrome	cooperate with family		
search for means to realize the goals and formulation of an individualized plan			
cope with craving by physical activity	illness self-management, including	guidelines for nurses to anticipate	supportive therapy group, relapse prevention
stepwise progression of activities	discussion of experiences with substances	+ handle conflicts, description of	gradually lifting of movement restrictions
health-promoting life style	urine tests on drugs, breath alcohol test	of clear consequences for patient	urine tests on drugs
	establish a working alliance with the family	facilitation of contact with foster-brother	social skills training
implementation of the plan			
sportive activities, psychomotor therapist	weekly sessions by psychologist and nurse,	detailed care plan by	weekly group sessions by psychologist/nurse
activity planning and evaluation with nurse	reinforcement of skills by nurses at the ward	coordinating nurse/psychologist	feedback by nurses on social behavior

Table 1 Continued

Patient A	Patient B	Patient C	Patient D
		implementation of the plan	
advices by dietician + physical activities		information and advices to foster-brother	
	visit to family and sessions by social worker	by coordinating nurse	
		evaluation (and readjustment)	
voices minimal, adherence seemed good	voices minimal, adherence seemed good	conflicts could be handled	self-control regained
abstinent from all illegal drugs	abstinent from all illegal drugs and alcohol	without the use of seclusion	social competence improved
activity program weeks + weekends	transmission to rehabilitation setting	almost daily contact with foster-brother	antipsychotic medication tapered off
weight stabilized		activities on the hospital grounds resumed	transmission to an apartment
transmission to rehabilitation setting		transmission to long stay department	

The headlines of the treatment processes of 4 patients are summarized within the cyclic framework of the Methodical Work Approach with its 5 phases: translation of problems into goals, search for means to realize the goals, formulation of an individualized treatment and nurse care plan, implementation of the plans, and evaluation (and readjustment). If evaluation indicated the necessity of readjustment, a new cycle was started. For a concise presentation, the second and third phase are combined.

abstinent', and the patient agreed on a movement restriction for the night he returned from weekend leave, to prevent him from taking cannabis again. The nurses supported him at 'difficult' moments and the psychomotor therapist started sessions with the patient to learn him to use sportive activities as a way to cope with craving, in line with the relapse prevention approach on the ward. A new goal in the Domain Physical health was formulated, to decrease the risks of the metabolic syndrome. In addition to the physical activities as means, also diet advices by a dietician were provided. In the domain Daily activities the goal became 'overcoming the lack of initiative and energy', which was realized by a stepwise progression of activities into the week program; in individual sessions with one of the nurses at the beginning and the end of the week, the patient planned and evaluated his activities during that week.

At the next evaluation, the patient had managed to keep abstinent from all illicit drugs, to control his weight and to perform a variation of activities in his week program at the ward as well as during weekend leaves. He then moved to a rehabilitation unit, to stabilize the skills he had learned. He was discharged to an apartment building in the city and he orientated at a voluntary job. He was able to abstain from illegal drugs, but unfortunately his motivation to take the clozapine faded, resulting in a psychotic exacerbation and readmission at a crisis intervention unit, where he had to spend 467 h in seclusion. In spite of booster sessions of psycho-education, treatment adherence was still not optimal after discharge; however, at readmission seclusion could be prevented and with the perspective of forced medication, he agreed on taking his clozapine again. From his last discharge onwards, outreaching home care service was offered to ensure the daily intake of the antipsychotic drugs and his condition remained stable.

Patient B

Patient B (male, 29 years) coming from a large family, was diagnosed with treatment-resistant schizophrenia and abuse of cannabis and alcohol. He had a longstanding history of involuntary admissions because of paranoid psychoses with delusions of poisoning and persecution, verbal and physical aggression and arson. He often absconded to the house of his family. They did not bring the patient to the ward until he became aggressive again. Due to discontinuation of the intake of clozapine during the stay with his family, the patient returned to the ward in such a state that seclusion was inevitable. He did not trust anyone at the ward and threated to kill others or himself. In the seclusion room he was extremely anxious because of vivid hallucinations and he seemed to fight with invisible attackers. In spite of the resumption of medication, his condition did not improve; the clozapine blood level remained sub-therapeutic because of frequent (self-induced?) vomiting. He refused to participate in a treatment planning session, but his clearly expressed wish 'to be

released from the hospital' was translated by the team into a goal of 'diminish the risks arising from his psychotic symptoms', to begin with a safe transmission of the patient from the seclusion room to the ward. He was physical examined, which did not reveal any cause for his emesis. Although he agreed with taking the clozapine and denied self-induced vomiting, the nurses were instructed to include in their service to the patient 1 h of company after the ingestion of the clozapine. After spending 1,414 h during 4 months in the seclusion room, the patient became less psychotic and could be readmitted to the ward. As soon as his condition improved, daily activities were offered. At the next evaluation, he consented to a goal in the domain Psychiatric symptoms, namely to increase his ability to cope with his illness, and with a goal in the domain Substance-use disorders, to get more insight in the effects of alcohol and cannabis. He participated in an illness self-management module, in which also the interaction of drugs and alcohol with his psychotic symptoms was discussed. He cooperated with monitoring his cannabis use by means of urine controls. The goal for the domain Social relations became the establishment of a working alliance with the family, which was realized by the social worker with a home visit and the invitation of the family for sessions. Patient B stopped his use of alcohol and drugs and demonstrated responsibility for taking his medicine. He moved to a rehabilitation unit, where he prepared for discharge to his family's home.

Patient C

Patient C (male, 51 years) grew up in a foster-family. He performed well at high school until the age of 15. Then he realized that he was different from other children. He became depressive and suicidal and committed willful fire-raising, for which he was jailed. One year later, his foster-mother died and the patient was admitted to a hospital, which was the onset of a life long career in psychiatric facilities, admitted on a involuntary basis because of a recidivism of robbery, vandalism, aggression and arson as well as alcoholism, self-neglect and suicidal behavior, every time he was released to society. He received a couple of diagnoses: alcohol dependency, pathologic gambling, personality disorder with borderline and antisocial characteristics, atypical mood disorder and a post-contusion state with fronto-basal brain damage after jumping from a height of 4 meter. His alcohol abuse could be forced into abstinence by disulfiram, but his disruptive behavior destabilized other patients within the hospital. He liked to organize his own activities on the hospital grounds, but his intrusive behavior provoked violent reactions of other patients. He persevered in his questions, which he screamed out at anyone, he destructed materials, urinated and even defecated at public places and set objects in his surroundings on fire. In his first year on the ward, he spent 1,118 h in seclusion, to protect other patients and staff from escalating aggressive interaction and to safeguard the ward from arsonist actions.

At his first treatment planning session after the introduction of the MWA, patient C agreed upon a re-analysis of the determinants of his impulsive, disinhibited behavior, to find interventions to diminish his interpersonal conflicts. After a cerebral CT-scan appeared unchanged, the disinhibited behavior was interpreted as a maniac symptom of his atypical mood disorder and a treatment with lithium carbonate was proposed. He lost weight because he did not allow himself enough time to eat, so one of the nurses was to accompany him during the meals. On lithium, his disinhibition decreased, a normal conversation became possible and the seclusion episode was ended. However, because of his challenging and impulsive behavior, the risk to be secluded again remained high and in the second year of his stay at the ward he still spent 376 h in seclusion. The psychologist started individual sessions with the patient to increase his frustration tolerance and his social skills. However, he hardly made any progress. After a new incident of arson, he was secluded again. Then, the means to reach the goal in the domain Psychiatric symptoms were redefined: instead of trying to enhance the patient's skills, the psychologist and the coordinating nurse designed a care plan with clear guidelines for the nursing team to anticipate and handle the problematic behavior of the patient and to provide the patient with a description of the consequences of any intolerable behavior on the ward or 'outside'. In this way, further episodes of seclusion were prevented and the patient resumed his favorite activities on the hospital grounds. He wanted to intensify the contact with his foster-brother, which was facilitated by the coordinating nurse. After the care plan had proved to 'work', he was transferred to a long stay unit. A few times a year he still gets out of control and has to spent a night in seclusion, resulting in a total of about 15–30 h of seclusion per year, a robust reduction compared with the initial necessity for such protection.

Patient D

Patient D was a social isolated, homeless man, aged 41, diagnosed with a psychotic disorder not otherwise specified, attention deficit disorder, dependence of amphetamines and an antisocial personality disorder. After a long history of drugs dealing and violent offenses provoked by the use of speed, resulting in several episodes of detention and forensic psychiatric treatments, the patient was involuntary admitted to the ward, with the intention of offering him a long term secured living situation. He was taking risperidone and OROS-methylphenidate.

At first, he had no goals for his treatment, but after being secluded for 48 h and being reported to the police because of verbal and physical aggression to staff and other patients, he realized that his ill-controlled aggression brought him many problems and he asked to learn to control his aggressive impulses. A behavioral analysis by the psychologist revealed that at least part of the violent actions originated from mistrust and paranoid misinterpretations, related to the use of amphetamine

and the irregular taking of the prescribed risperidone. So, in the treatment plan it was agreed that the patient was allowed to leave the ward on condition that he had taken his pills and produced a urine test without drugs. Shortly after the treatment plan was drawn up, the patient was confronted with a positive test on amphetamine. He exploded, destroyed the furniture and a window of the living room and threated to kill people. He was secluded for 38 h. These developments led the team to a forwarded evaluation; as the continued use of speed by the patient formed a serious risk of violence, the psychiatrist decided to allow the patient to leave the ward only in company of a nurse. The effect of forced abstinence was enormous: the mistrust and paranoid misinterpretations disappeared and the patient appeared to be a friendly, helpful and rather shy person, without any verbal of physical aggression. He started daytime activities and participated in the relapse prevention group offered by the psychologist and a nurse. The patient stated that he felt much better without speed, but admitted that he needed continuation of urine analyses to keep him 'clean'. The nurses accompanying him outside the ward observed that the patient was anxious in social situations. To threat or to withdraw appeared to be his main coping strategies. In individual sessions with the psychologist he literally walked away when he felt unable to talk. So the goal in the domain Social relations was changed from aggression regulation into reduction of social anxiety and the acquisition of better social skills. The psychologist offered an individual social skill training and the nurses provided the patient with feedback on his behavior at the ward. Stepwise the patient regained his autonomy; the movement restrictions were lifted and the patient was allowed to visit daytime activities outside the ward. To stabilize his abstinence, he participated in a supportive relapse prevention group by the psychologist and one of the nurses, and he continued the urine drugs tests three times a week. Nine months after the seclusion incident, the patient expressed the wish to live independent. By shifting his daytime program more and more to activities outside the ward, the patient was helped to prepare for this new phase. He moved to an apartment building on the grounds of the hospital, where he was supported by a casemanager. After the patient settled in his new living situation, the risperidone was tapered off, without reappearance of psychotic symptoms. The diagnosis of psychotic disorder was omitted and the diagnosis of antisocial personality disorder was changed into personality disorder NOS.

Effects reconsidered

The introduction of the MWA not only changed the treatment trajectories of individual patients, but also had implications for the functioning of the team. The ward was staffed by a team of nurses, a social worker, a psychologist, and a psychiatrist,

collaborating on a regular basis with occupational therapists, psychomotor therapists, a music therapist and a general practitioner. Before the implementation of the MWA, multidisciplinary treatment planning was merely a compilation of the separate contributions of several disciplines, without an integral vision on the treatment process, and collaboration was hampered by a lack of congruency between the format of the treatment plan and the nursing care plan. Most attention was paid to the description of problems and psychopathology of the patients, whereas the formulation of goals and interventions was rather vague. In the weekly multidisciplinary meetings, the nursing team 'handed over' the difficulties and incidents of the patients and received ad-hoc suggestions to handle actual problems, without reference to the care plans. The care as planned was not delivered consistently, and progress was not systematically evaluated. To prepare the transformation of the treatment process, all staff was invited to participate in a multidisciplinary expert group. This group worked out the new procedures, like a description of the roles and responsibilities of all disciplines involved in the treatment process and a new format for the treatment and nurse care plans. As the team was involved in the implementation of the MWA from the start onwards, the commitment was high.

After one and a half year, the MWA was evaluated with the staff in a plenary session and by means of a written questionnaire. Several changes were mentioned: (1) There was a greater convergence of the treatment plans and nurse care plans, and the new format with problems and strengths, goals and means per life domain gave a clear lead to all professionals for their work with the patient. (2) In their daily contacts with the patients and their family, the nurses observed that engagement was furthered by the formulation of highly personalized plans, in which the patients recognized the decisions agreed upon in the treatment planning session. (3) All staff were more aware of the goals of each patient and in their daily reports they formulated the care they delivered in terms of these goals. The weekly multidisciplinary meetings had become more focused on the goals and interventions as described in the plans, but staff still saw room for improvement. (4) Staff felt more comfortable in using alternative strategies to cope with aggressive behavior of patients and considered the interventions detailed in the care plans and treatment plans as clear leads for themselves and the patients. (5) The evaluations had become more focused and goal directed. The description of the care process in terms of whether the objectives were achieved formed useful material for the discussion and set staff as well as patients thinking. (6) Transmissions of a patient to a less intensive care setting had become more successful because the treatment and nursing care plans provided sufficient guidance to guarantee the continuity of the care process within the next facility.

Along with these changes in the working practice, also the team process had developed. Given the complexity of the psychopathology of the patients admitted to

the ward, teamwork was essential. As illustrated in the case of the patient with a treatment-resistant paranoid psychosis and emesis, even drug treatment may be more complicated than just the prescription of antipsychotics by the psychiatrist, and may require the cooperation with the physician and nurses. For the promotion of treatment adherence and a drugs free lifestyle, nurses, psychologist and psychiatrist had to share the responsibility for interventions like illness self-management training, psycho-education on drugs and alcohol, relapse prevention or social skills training. The occupational therapist, psychomotor therapist and nurses collaborated in daytime or sportive activities and in addition to a central role of the coordinating nurse, the social worker, psychologist or psychiatrist contributed in the establishment of a working alliance with the family. In the treatment plan, the specification of the activities of all care providers per life domain underscored that the contributions of the different professionals to the patient's goal were interrelated and often synergistic. The involved professionals had to coordinate and attune their interventions to the patient's goal and use the same language to support the generalization of skills. Thus the implementation of the MWA not only clarified the roles and responsibilities of all care providers, but also promoted a culture of recognition of the efforts of all clinicians as well as addressing each other in case of inappropriate accomplishment. This furthered the interdisciplinary collaboration and team cohesion, and even the professionalization, in particular of the nurses. By their task in the coordination of the care and the involvement of the patient and the family in the treatment process their position was enhanced. At the multidisciplinary meetings, they no longer 'handed over' problems to the 'solved', but presented an analysis of possible causes of undesired changes and suggested ways to intervene. In treatment planning sessions, all participants of different professional background engaged in the discussion, offered input from their specific expertise and proposed innovative ideas. So the changes in the working practice had a parallel with the team process: together with the turning of the focus of attention from the patients' problems to a perspective including their strengths and goals, the professionals of the multidisciplinary team developed their own qualities and creativity.

Discussion

The aim of the present study has been the exploration of the process of change underlying the reduction in the use of seclusion at a ward for the intensive treatment of patients with psychoses and substance-use disorders. After the implementation of the MWA, the working practice has become more systematic and goal-directed, with repeated critical reflection on the results and revision of plans if necessary. The relation with the decreased use of seclusion is complex. A possible explanation is

that the treatment and nurse care plans provide more perspective and clarity to the patients and diminish their uncertainty and frustration, because they have participated in the planning and they know what to expect from each of the professionals involved in their treatment. In previous studies, the improvement of treatment plans or the involvement of patients in treatment planning has been part of several multifaceted initiatives by which reduction in the use of seclusion has been achieved, but a contribution of changes in the treatment process to the results could not be demonstrated (Donat, 2003; Huckshorn, 2004a; Taxis, 2002; Wieman et al., 2014). In general, the scientific literature provides little evidence for the effectiveness of care plans with respect to patient outcome (J. Hall & Callaghan, 2008; Mason, 1999; Moloney & Maggs, 1999). However, the MWA comprises more than the use of treatment and care plans: the essentials are the systematic way of working and the cyclic nature of the treatment process. An intervention which had some features in common with the MWA, and consisted of 'the engagement of patients in the formulation of the treatment plans, frequent and regular joint patient and staff evaluations and renegotiation of treatment plans if necessary', did not result in a reduction in experienced coercion, which was explained by 'the unsatisfactorily implementation of the intervention as well as the very low starting level of coercion, leaving only small margins for improvement' (Sørgaard, 2004). In the present study, all staff has been involved in the preparation and implementation of the MWA from the beginning, which might have furthered a successful implementation. An alternative explanation of the preventive effect of the MWA for the use of seclusion is that the improved treatment and nurse care plans offer the nurses more directives to prevent or cope with dangerous behavior of the patients, which advances the confidence in themselves and each other. Confidence within the team is an important variable influencing the decision-making of nurses on seclusion (Boumans et al., 2012).

The MWA also has influenced the team process. Competence and roles of all participants in the team has become more clearly differentiated and equally valued, which prompts all professionals to take one's share of the responsibility, participate actively in discussions and propose creative solutions. Interdisciplinary collaboration, team cohesion and professionalization are enhanced. An effect of this developments on the prevention of seclusion may be assumed, as earlier research shows that ward staff play a crucial role in influencing the likelihood that conflict or containment events will occur in inpatient psychiatric settings, with factors as negative staff morale and staff-staff conflict preceding an increase, and factors as positive practice, positive teamwork and a proactive ward manager resulting in a decrease (Papadopoulos et al., 2012). Insufficient cooperation such as hierarchical ambiguity, multidisciplinary issues and anxiety and defensiveness of ward staff were described as constraints and blocks to change in levels of containment on acute psychiatric wards (Brennan

et al., 2006). Ward characteristics explained much of the variance in seclusion rates between admission wards (Janssen et al., 2013) and in a study on 136 acute psychiatric wards, the wards with significantly lower rates of containment events were characterized not only by good leadership and attitudes towards patients and low burnout, but first and foremost by good teamwork and structure (Bowers, Flood, Brennan, & Allan, 2008). In projects to reduce violence and the use of restraints, the "enhanced communication among the treatment team and ward staff" as well as "physicians and nurses in particular, working as a team, with common goals and ongoing communication for patient safety", were designated as key factors (Sclafani et al., 2008; Sullivan et al., 2005) and the introduction of executive-level reviews of seclusion and restraint fostered " a spirit of interdisciplinary collaboration and creative thinking, collaborative problem-solving and the exploration of new ideas" (Allen, De Nesnera, & Souther, 2009). Studies on health care teams suggest that collaboration, conflict resolution, participation, and cohesion are most likely to influence staff satisfaction and perceived team effectiveness, but team working has many challenges (Deady, 2012; Lemieux-Charles & McGuire, 2006; McHugh & Byrne, 2012; Rodenhauser, 1996; Schofield & Amodeo, 1999). Interdisciplinary collaboration can be hindered because "mental health professionals, including psychiatrists, seem to have rather vague notions about the specific expertise of the most important disciplines in mental healthcare" (Hutschemaekers, Tiemens, & Kaasenbrood, 2005) and McLoughlin and Geller (2010) even stated that "interdisciplinary treatment planning processes are more a myth than a reality". So, the progress in the team brought about by the MWA can not be taken for granted and seem to have been of importance for the reduction of seclusion.

Unlike the changes in the working practice, which are explicit intended and inherent to the design of the MWA, the improvement in interdisciplinary collaboration, professionalization and team cohesion as observed in this study, is not an a priori and consciously aspired aim of the implementation of the MWA, but rather a positive side effect. A comparable phenomenon can be observed in psychotherapy and is called the non-specific effect. It refers to 'common' or non-specific factors, such as the therapeutic alliance and the expectancy of client and therapist. These effects predict a positive clinical outcome, regardless of the variety of psychotherapy approaches and outcome measures, and are seen as active therapeutic factors which should be optimized (Ardito & Rabellino, 2011; Chatoor, 2001; Omer & London, 1989; Strupp & Hadley, 1979). Also in the treatment of patients with major psychiatric disorders there is some evidence for these non-specific effects (Cuijpers et al., 2012; Howgego, Yellowlees, Owen, Meldrum, & Dark, 2003; Priebe & Mccabe, 2008; Priebe, Richardson, Cooney, Adedeji, & McCabe, 2011). For psychotherapy, it was estimated that specific factors (specific techniques of a psychotherapy) are responsible for only one sixth of the improvement, extra-therapeutic factors (operative

in no-treatment control conditions) for a third and non-specific factors (common to all psychotherapies) for the largest share of about one half (Cuijpers et al., 2012; Lambert, 1992). By analogy with these findings, we postulate that interventions with elements of staff education and training could produce specific effects like changes in attitudes or the acquisition of knowledge and techniques, but also non-specific effects such as an increase in the staff's moral, positive expectations and mutual trust, associated with more positive outcomes. If similar rates of the relative contribution of specific and non-specific effects to the outcome of psychotherapy were valid for the effects of staff training to prevent the use of seclusion, then a sixth of the reductive effect of the MWA could be attributed to specific factors (the implementation of a systematic, goal-directed and cyclic treatment process), whereas half of the effect would be the result of non-specific changes in the functioning of the multidisciplinary team.

An important limitation of the present study is the absence of a systematic data collection on satisfaction of patients and family. Inquiries into the wishes and appreciation of the care by the patients and family formed part of the preparation phase of each treatment evaluation, but these information was only used for individual care planning purposes. Active involvement of the patient, together with their families and other natural supporters, in the process of treatment planning is seen as a key element in achieving favorable outcomes, but care providers reported difficulty in engaging inpatients into care planning (Liberman, Hilty, Drake, & Tsang, 2001; Storm & Davidson, 2010; Storm & Edwards, 2013). In this light, the study would have benefitted from a periodical administration of measures of patient and family engagement, satisfaction with the provided care, and quality of life.

Nevertheless, the MWA-based treatment and nurse care plan impressed as a consistent guidance for patients, family and professionals to work together for the goals of the patient. Similar interventions were offered to different patients, but framed within the specific context of the patient, and integrated in the treatment plan when the patient was ready for it. The cyclic design of the treatment process in the MWA promotes a critical reflection on the patient's progress during implementation of the treatment plan and adjustment of the goals or the means if the results are disappointing. For patients with a long history of treatment-resistant mental illness, alertness to new developments in the illness process of the patient, prompting to re-assessment and reconsideration of diagnoses, is essential to prevent therapeutic nihilism; the MWA encourages care providers to proceed in critical evaluation and search for diagnostic and/or therapeutic means to improve the condition of the patient.

Conclusion

The reduction in the use of seclusion after the implementation of the MWA in the treatment process of inpatients with psychoses and substance-use disorders was associated with explicit, specific changes in the working practice, arising from the systematic, goal-directed and cyclic nature of the intervention. Also implicit, non-specific changes in the team process were observed, namely improved inter-disciplinary collaboration, team cohesion and professionalization. The contribution of these non-specific team effects to the prevention of seclusion may have been considerable, and more research into the non-specific effects of interventions for the prevention of seclusion is warranted. If staff training interventions in general will be found to have positive non-specific effects on staff functioning, outcomes can be improved by deliberately deploying and enlarging such effects.

Chapter 6

“Could you please reduce your seclusion rates?” Restructuring patient care through the Methodical Work Approach

Abstract

Creating a safe treatment environment with a minimum use of seclusion at a ward for intensive psychiatric care is a complex process involving many actors. Although s/he is accountable for the use of seclusion, the psychiatrist's influence on actual seclusion practices is limited. The Methodical Work Approach (MWA) to patient care is designed to improve multidisciplinary care delivery. To investigate how the psychiatrist can (re)structure the organization of treatment by means of the MWA, a quantitative analysis of the effects of its implementation on the use of seclusion was performed, comparing the experimental ward to control wards. In a qualitative analysis the changes in the work process and the roles of the various professionals involved were charted. Results showed that at the intervention ward, the use of seclusion had reduced significantly more than it had at the control wards, which was associated with enhanced interdisciplinary collaboration and professionalization. By helping to limit the use of seclusion, possibly due to enhanced interdisciplinary collaboration and professionalization, the MWA offers new horizons for mental health care professionals and their patients.

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Introduction

"Could you please reduce your seclusion rates?" Many ward psychiatrists will feel a little self-conscious when hearing this request. Although no easy undertaking itself, cutting down the use of benzodiazepines apparently belongs far more to a psychiatrist's domain than limiting the use of coercive practices like seclusion or at least is a measure that is easier to implement. While benzodiazepines cannot be dispensed without medical authorization, the initiative to place a patient in a seclusion facility to safeguard his/her safety and the safety of those around him/her tends to lie with the psychiatric nursing staff, only after which the ward psychiatrist is informed. Yet, the psychiatrist remains responsible for the patient's safety during seclusion as well as the safety of the other patients at the ward and the attending staff. Because his/her influence on the actions and behaviors of all those involved is limited, the psychiatrist is left with little room to maneuver. Taking into consideration that there is no scientific underpinning for the effectiveness of seclusion where the evidence of its harmful effects is substantial, it is understandable that the lack of enthusiasm among psychiatrists to take part in the public debate and academic discourse does not match their factual (or expected) role in clinical practice (Dols & van Tilburg, 2010; Frueh et al., 2005; Sailas & Fenton, 2000; Spijker, 2005; Voskes et al., 2011).

But what *can* the psychiatrist do to moderate the use of coercive practices? The scientific literature mostly centers around 'radical' measures such as the shutdown of seclusion facilities, with far less attention being given to 'less dramatic' strategies that coincide more with prevailing treatment practices and the psychiatrist's responsibilities. One such less drastic and newly developed strategy is the Methodical Work Approach (MWA), a systematic, transparent and goal-driven way of working characterized by cyclic evaluation and adjustment of individual care delivery plans. The MWA consists of five phases: 1) translation of problems into goals, 2) search for means to realize the goals, 3) formulation of a treatment plan by matching specific means to individual needs and preferences, 4) implementation of the plan and 5) evaluation and readjustment. These various phases may be cyclic in that they may be repeated several times throughout the treatment process (Coussens, 2010; Tiemens et al., 2010). The treatment plan is tailored in consultation with the patient and family members, helping the patient to gain insight into how s/he can work with the team to attain personal goals. Such a personalized treatment plan offers patients a more predictable environment and nursing staff well-defined guidelines. Through its emphasis on cyclic evaluation, the MWA fosters regular and critical reflection of treatment effects and early detection of problems impeding treatment progress. Through its goal-oriented design, the MWA also lends high priority to the prevention of seclusion given that in such circumstances none of the patient's needs and goals will be met or achieved. These features prompt us to posit that the MWA can

contribute to a reduction in the necessity and use of seclusion. In the present paper we report on the effects of MWA implementation in a clinical setting. With our study we seek to answer the question how the attending psychiatrist can help (re)structure patient care while minimizing the use of seclusion.

Method

Setting

The study was performed in a regional Dutch mental health service where, from 2006 onwards, efforts have been directed at curbing the use of coercive measures. One contributor to this project was the first author, the attending psychiatrist at a ward for the long-term and intensive care of patients suffering from psychoses and substance-use disorders. At this ward, seclusion rates following aggressive incidents were high. To amend this, the project zoomed in on the content and practical organization of the treatment process. The formats of treatment and nursing plans were modified. For each care domain, problems, strengths and goals could be specified, as well as patient-specific interventions and the professional(s) responsible for the intervention. The patient's coordinating nurse was responsible for preparing the patient and his family for and supporting them during treatment planning meetings. After the multi-disciplinary team had completed an MWA training course in the first quarter of 2009, the approach was adopted and implemented.

Study design

Given the unique nature of the experimental ward, we looked for wards with comparable patient populations within our own hospital, opting for a quasi-experimental, non-equivalent control group design comprising three other wards that also offered intensive, complex inpatient care: a long-term and intensive care ward for patients diagnosed with personality disorders and/or intellectual disabilities, a forensic-psychiatric ward, and a ward for acute and intensive psychiatric care, all with seclusion facilities. Outcome measures were seclusion incidence and duration, which we based on the quarterly rates recorded with the Argus system (Janssen et al., 2011) starting from the second quarter of 2008 up to and including the second quarter of 2010. The hypothesis that at the experimental ward reductions in seclusion rates would be more substantial than those achieved at the control wards was tested using multivariate regression analyses with two dependent variables: seclusion at the experimental ward and seclusion at the control wards. Two separate analyses were performed for seclusion incidence and total seclusion duration.

In a qualitative analysis we sought to identify which factors had contributed to any reductions in the use of seclusion at the experimental ward. We examined

individual treatment trajectories with respect to the working methods that had been applied and the roles the various professionals had adopted within the context of successive MWA cycles. The implementation process was evaluated using self-report questionnaires and a multidisciplinary team meeting. (For a more detailed description of our study design, statistical procedures, and results, we refer the reader to our earlier publications (Boumans et al., 2014; Boumans, Walvoort, Egger, & Hutschemaekers, 2015; Boumans, Egger, Bouts, & Hutschemaekers, 2015).

Results

Seclusion rates

Within the study period (2nd quarter 2008-2nd quarter 2010) the incidence as well as the total duration of seclusion had reduced significantly more at the experimental ward than it had at the control wards ($p < 0.01$), with seclusion incidence per 1000 patient days at the experimental ward having dropped from 15 to 3 per quarter and seclusion duration from 934 to 62 hours, where at the control wards the initial incidence of 11 had risen to 12 and total seclusion duration had gone down from 398 to 356 hours.

Qualitative analysis

Apart from the inherent benefits of the working methods prescribed by the MWA, among which are improved treatment transparency and goal-directedness, the careful formulation of interventions had also clarified the roles and responsibilities for all disciplines while boosting differentiation. Interventions were also found to be better aligned and more synergistic. Speaking the same language to create clarity and consistency for the patient had helped foster mutual understanding and cohesion among team members, which in turn had promoted professionalization in the various disciplines further, most notably so for the nursing staff. Their coordinating role had strengthened the nurses' position and had prompted innovative ideas: rather than confronting the multidisciplinary team early Monday morning with a problem that had arisen during the weekend, they offered potential solutions.

Discussion

Following the implementation of the MWA, we found that the use of seclusion had reduced substantially more at the experimental ward than it had at the control wards, which was associated with enhanced interdisciplinary collaboration and professionalization. Abderhalden et al. (2008) had earlier suggested that facilitating intra- and

interprofessional cooperation might be an important factor in reducing aggression and the use of coercive measures. Utilizing his/her central role in shaping and monitoring care content and treatment delivery at intensive care wards (Hutschemaekers et al., 2005), the psychiatrist can help curb seclusion rates by fostering team collaboration grounded on well-defined treatment plans. Because effective interdisciplinary collaboration is contingent on preserving differentiation among disciplines as well as devising joint core tasks (Rosen & Callaly, 2005), the MWA offers the structure to do just that. Based on an integral approach to the problems and challenges and the needs and possibilities of the individual patient, his/her family, and the health professionals involved, the attending psychiatrist can provide a useful framework that allows each of the disciplines to tailor their interventions. It needs to be noted here that systematic evidence that a care or treatment plan improves the quality or effectiveness of patient care or decreases the use of coercive practices is scarce (Donat, 2003; A. Hall, Wren, & Kirby, 2008; Sørgaard, 2004; Taxis, 2002). This may partly be due to inadequate implementation (Sørgaard, 2004). The MWA derives its power from its consistent, cyclic monitoring of patient-specific treatment goals and results; its implementation, review and modification are given the same priority as the drafting of the original treatment plan.

Due to differences between the intervention and control wards, the project suffers from certain limitations, specifically in relation to the internal validity of the results. Moreover, although being the scientist practitioner as well as the attending psychiatrist at the experimental ward afforded the first author optimal involvement in the MWA implementation process and inside knowledge of the changes being achieved, her position may also have caused a potential observation bias. Our study design does not allow us to draw any conclusions as to potential causal relationships either between MWA implementation and augmented professionalization and collaboration or between enhanced professionalization and collaboration and reductions in seclusion use. Nevertheless, our findings have provided us with sufficient reference points to help us fine-tune the methodical approach to patient care further and to continue our studies into the safety and effectivity of MWA-based treatment trajectories and their effects on the collaboration among professionals, patients, and their families.

Conclusion

The MWA helps define and guide treatment practices at a ward for intensive psychiatric care. By offering a clear framework and firm footing for all parties engaged in the process, this systematic, transparent, goal-oriented, evaluative and cyclic care delivery model helps reduce the need for seclusion. By his/her investment in a

methodical design of the treatment process, the ward psychiatrist can initiate treatment trajectories that enable all disciplines to exploit their expertise and integrate their contributions optimally. The MWA thus fosters interdisciplinary collaboration and professionalization in mental health care.

Chapter 7

Summary and discussion

Summary and discussion

These studies on the methodical management of intensive psychiatric care aimed to investigate the effects of an intervention on the use of seclusion, as well as furthering insight into professional decision making and performance in relation to changes in seclusion practices after implementation of the intervention, the Methodical Work Approach. In this final chapter, the main findings of the previous chapters will be summarized and methodological and theoretical considerations will be discussed. Finally, conclusions and suggestions for future research will be provided.

Main findings

In the general introduction (**chapter 1**), we described how the research presented in this thesis was inspired by the consistent finding of a large facility effect with respect to seclusion rates. Whereas patient factors and objective ward characteristics do not fully explain these substantial differences, earlier scientific work designated staff factors as important variables for further study to understand and change seclusion practices. Therefore, our research concentrated on staff performance.

Our first study aimed at a clarification of nurses' decision making on seclusion. In **chapter 2**, we presented the results of a vignette study, in which sixty Dutch psychiatric nurses of four closed wards reported their tendency to seclude a theoretical patient. In a multilevel regression analysis, the effects of patient characteristics as well as the actual circumstances on decision making were quantified. Approachability (whether there was a good or hardly any possibility to communicate with the patient), staffing level and confidence within the team had the greatest impact on the decision to seclude. The effects of 'pure' patient characteristics as diagnosis and history of seclusion were small as compared to the effects of interpersonal and contextual factors. These results show the importance of context: whether or not a patient is secluded is highly dependent of the success or failure of the nurse in charge to communicate with the patient and whether or not this nurse can trust on sufficient and reliable colleagues. The subjectivity of decision making on seclusion was demonstrated by the high intra class correlation of 0.30, indicating that the nurses varied widely in their judgement. We also found a correlation of team reflexivity with the team's tendency to prevent seclusion.

Chapter 3 encompassed an introduction of our intervention, the MWA with its cyclic five phases: 1) translation of problems into goals, 2) search for means to realize the goals, 3) formulation of an individualized plan 4) implementation of the plan and 5) evaluation and readjustment. We described how the MWA was implemented at a ward for the intensive treatment of inpatients with psychoses and substance-use disorders. The effect on the incidence and duration of seclusion was investigated by

comparison of this ward with a control group consisting of three other wards within the same hospital. Multivariate multiple regression analyses did not show any statistically-significant changes over time in the number of incidents or in the hours of seclusion at the control wards. In contrast, the experimental ward differed statistically significantly from the control wards by a reduction in the number of seclusion incidents ($p < 0.01$) and a reduction in the number of seclusion hours ($p < 0.01$). Thus, at the ward where the MWA was implemented a more pronounced reduction was achieved in the number of incidents and in the total hours of seclusion.

In **chapter 4**, we presented the results of our research on staff variables and seclusion parameters during the implementation of the MWA. We sought for changes in staff variables that could explain the preventive effect on seclusion of the MWA, but the nurses of the experimental ward did not differ from their colleagues at the control wards in any of the measures. The changes we did find concerned all participating wards: a growing awareness of the nurses of the importance of contextual factors and their own role in the seclusion process, presumably a result of the institutional seclusion reduction program, by which the discussion on seclusion was facilitated. The fragility of such progress was demonstrated after an unexpected institutional freeze of recruitment, which launched a period of organizational turmoil. While at the implicit level of decision making on seclusion the importance of contextual factors was unremitting, the explicit awareness of the nurses of these influences waned and at the same time the tendency to seclude in the vignettes increased, suggesting that 'automatic' responses grew in importance at the expense of more conscious decision making. The influence of the organizational context was further illustrated by the negative effects of organizational instability on the seclusion rates: an increase in the number of seclusion incidents at the experimental ward and an increase in the duration of seclusion at all wards. During this period, the scores for work engagement of the staff dropped, in particular at the experimental ward. Our hypotheses that the implementation of the MWA would have a positive effect on team reflexivity and work engagement of the nursing staff were not confirmed.

Whereas the aforementioned study predominantly show the unfavorable effects of adverse organizational changes, it does not explain or, and if so, how the MWA affected the staff of the experimental ward. The process of change at the experimental ward was explored in a qualitative study, reported in **chapter 5**. We described in detail several patients' treatment trajectories and used these findings together with staff observations and evaluations to analyze the changes in staff performance after implementation of the MWA. This study made us shift our focus of attention from the nursing staff, as key-players in the safety management at the ward, to the multidisciplinary team as a whole. Although not deliberately pursued, the MWA was found to contribute to three interrelated changes within the team: an increase in team cohesion, interdisciplinary collaboration and professionalization. The MWA treatment

plan cycle not only clarified the roles and responsibilities of all care providers, but also promoted a culture of recognition of the efforts of all clinicians. Collaboration developed from multidisciplinary into interdisciplinary, team cohesion increased and professionalization was furthered, especially of the nurses. Their role to prepare for treatment planning with the patient and the family empowered them and rendered them more pro-active in the management of problematic behavior. These changes seem to have been crucial for the effect of the MWA in the prevention of seclusion.

In **chapter 6**, the clinical implications of our findings were presented from the perspective of the psychiatrist. We described how the psychiatrist in charge of a ward for the treatment of patients with severe mental illness and dangerous behaviors can engage the staff into an interdisciplinary treatment process and minimize the need for using seclusion. Utilizing his/her central role in shaping and monitoring care content and treatment delivery, the psychiatrist can promote a methodical approach of care and thus provide a framework that allows all involved professionals an optimal and integrated contribution to the realization of the patients' goals.

Methodological and theoretical considerations

This thesis was conceived from the position of scientist practitioner, investigating an intervention to improve clinical practice. To assess the generalizability of our findings, the dual role of attending psychiatrist and principal investigator has to be considerated. As explained in chapter 1, with this research approach we minimized the risk of incomplete implementation and a type II error, the failure to reject a false null hypothesis. Because by doing so, we increased the risk of a type I error, the incorrect rejection of a true null hypothesis, we took several measures, such as strict anonymity guaranteed for the nurses answering the questionnaires, the use of objective data as seclusion outcome measure and supervision by an external scientific committee. Both types of possible errors need to be discussed in more detail in relation to our hypotheses. (Below, for legibility, the alternative hypotheses (H1) are rendered).

Our **first hypothesis** was a) that the effect of patient variables in a vignette study would be rather small in comparison to the effect of contextual and interpersonal variables and b) that the tendency of a team to seclude would be inversely proportional to the team's reflexivity. As this hypothesis was studied at baseline, before the start of the implementation trajectory and without any relation to the introduction of the MWA, the risk of a type I error *because of* the dual role of the principal investigator may be considered very low, although this cannot be further substantiated; we indeed found that the effect of patient variables was small in comparison to the effect of contextual and interpersonal variables (a), a conclusion that was confirmed in our later studies (chapter 4). However, the inverse relation between team reflexivity and the team's tendency to seclude (b), which we found at

baseline, was not confirmed at any of the later time points. For each time point, bivariate correlation testing was based on just a few measurements, namely the mean scores of four teams. These small sample sizes complicate the interpretation of the results and leave the question whether team reflexivity is related to the team's decision making on seclusion unanswered.

Our **second hypothesis** was that, compared with the control wards, at the experimental ward a more pronounced reduction of the use of seclusion would be achieved. In testing this hypothesis, the dual role of the principal investigator was purposely pursued to optimize the implementation of the intervention. As described in chapter 5, the implementation of the MWA at the experimental ward was fairly adequate. Subsequently, at the experimental ward a more pronounced reduction of the use of seclusion was achieved. It is difficult to say to what extent these results can be attributed to the MWA as such and what has been the investigator-psychiatrist's personal influence on the treatment process and seclusion practices. Although the MWA is basically just a systematization of the treatment process and does not require any special clinical or personal qualities of the psychiatrist or other staff, replication of its implementation in another setting without the merging of clinical and scientific roles is needed for validation of our results.

Another methodological problem was formed by the fact that the experimental ward was a unique specialized unit for the treatment of a specific group of patients with psychoses and substance-use disorders, without counterpart in the hospital; therefore, we had to use a quasi-experimental, non-equivalent control -group design. The differences in the groups of patients admitted to the experimental and the control wards certainly limit the generalizability of our findings.

To enlarge insight in how staff was affected by the implementation of the MWA (our **third research question**), we explored four staff parameters. We postulated that working along the principles of the MWA would be associated with an increase in team reflexivity and work engagement, changes in the nurses' attitudes toward seclusion and a decrease in tendency to seclude. As we did not find any effect of the MWA on the staff parameters measured, none of our hypotheses was confirmed, which diminish the possibility of the investigator's influence on the questionnaire results, as to fit within the assumptions. A type II error, though, is not excluded, because the sample sizes were relative small. Moreover, we measured team reflexivity only by self-assessment, asking the individual nurse to score the evaluating and reflecting behaviors within the team. Possibly, the addition of a judgement of team reflexivity by a team leader or an external assessor would have added a different perspective.

During a period of organizational turmoil, scores for work engagement decreased, in particular at the experimental ward. This suggests that work engagement is more sensitive to (unintended) unfavorable influences within the organization than to intended progress in working practices. However, in the last phase of the study, we

included also uncontrolled research. The recruitment freeze and organizational turmoil were unexpected and the consequences were not systematically investigated, implicating that the conclusions about the negative effects of such events on the innovation project remain equivocal. However, in present-day rapid changing mental health services, interfering organizational factors on experiments of some duration are more the rule than the exception, so our study may be an example of how to make a virtue of necessity.

Our **fourth research question**, into the effects of the implementation of the MWA on the working process of the team, was investigated in a qualitative study. Here, the dual role of clinician-investigator formed an essential characteristic of the study. The conducting of the research from the position of scientist practitioner had many advantages, such as direct influence on the implementation process, observations from the front line and daily experience with the complex interactions on the ward. Feedback of the staff on the implementation process helped us to overcome barriers. Within the team, (seclusion) practices were made object of research-induced systematic reflection. The mutual relationship with colleagues continuously supplied our research with questions from the workplace and urged us to seek answers to questions which really matter in patient care. Observations during the progress of our research made us extend our focus of attention from the nursing staff to the full multidisciplinary team and to include the wider organizational context. This brought new insight: interdisciplinary collaboration, team cohesion and professionalization emerged as the main changes in the working process.

On the basis of our findings, we have to **rethink our hypotheses** about the effects of the MWA on staff performance. The prevention of seclusion after reformation of the treatment process along the principles of the MWA is not due to changes in the nurses' work engagement, neigther to attitudes toward seclusion nor to increased team reflexivity, but to the way professionals collaborate: the MWA clarifies each professional's role in the task of providing effective and safe patient care and makes the prevention of seclusion a priority of the entire multidisciplinary team. The management of violence is not mainly left to the nurses, but is made object of inter-disciplinary collaboration, in which the expertise of the nursing staff is highly valued. This promotes professionalization in a double sense (Hutschemaekers, 2001): both an increase in expertise, build-up of knowledge and elaboration of new working practices, as well as the promotion of an atmosphere in which professional autonomy and personal growth can further develop.

To explain why the implementation of the MWA enhanced professional collaboration, the concept of **'organizational learning'** might be convenient. Organizational learning is a process which can take place in a work situation in which staff members are encouraged to learn from each other (Argyris, 1999). The idea of the 'learning

organization' is based on the premise that all employees, each on his or her own level, have knowledge of which the organization can profit. By mobilization and systematization of this knowledge longstanding habits are questioned and new practices are learned (Weggeman, 2000). According to learning theory, knowing and learning are dynamic and collective processes unfolding in a social context where people act and interact with each other. This context-bound or 'situated learning' takes place in so-called 'communities of practice' in which practitioners learn with and from each other in practice (Lave & Wenger, 1991; Wenger, McDermott, & Snyder, 2002). In health practice, the operationalization of the concept of communities of practice has been heterogeneous and their effectiveness is still unclear. Communities of practice have been used for learning and exchanging information and knowledge, to improve clinical practice and to facilitate the implementation of evidence-based practice. Four characteristics were identified: social interaction among members, knowledge sharing, knowledge creation, and identity building (Li et al., 2009; Ranmuthugala et al., 2011). The principle of 'situated learning in communities of practice' was found to be successful in a coercion reduction project (Abma, 2007); organizational learning seems to be an appropriate instrument to facilitate a process of questioning and changing such a longstanding practice as seclusion, by the explicitation of implicit knowledge tacit in all staff members and the mobilization of creativity to find alternatives.

In retrospect, we postulate that organizational learning has been the vehicle by which the MWA enabled the team to find new working practices and to prevent seclusion. For the management of (imminent) violent and impulsive behavior of patients with severe mental illness there is no miracle cure. Finding adequate solutions for each individual patient demands the knowledge and creativity of all staff. As the MWA induces discussion and critical reflection on the treatment process and results, knowledge is shared and new ideas are born; the identity of the contributing professionals of different disciplines is reinforced within the unifying sense of working together to help the patient reach his or her goals.

As a consequence of interrelatedness of clinical practice and research, especially in the qualitative study, the results in this thesis can be considered very relevant for real-life mental health practice and may have a reasonably high ecological validity in the definition of Bronfenbrenner (1977) : 'the extent to which the environment experienced by the subjects in a scientific investigation has the properties it is supposed or assumed to have by the investigator'. Being part of the multidisciplinary team and investigator at the same time was essential to bring about change as well as to experience and analyze in depth this process of change; research from a more remote, 'objective' position may have lacked the subjective experience 'from within' leading to the insights which form the heart of the matter. For the question of the generalizability of the conclusions, a **comparison with other research** on the topic is indicated and will be presented below.

A core element of the MWA, the involvement of the patient in the production of an individualized **treatment plan** including interventions to reduce the risk of aggression and seclusion, has been part of other strategies to prevent seclusion. In several studies, a specific contribution of the use of such treatment plan could not be demonstrated (Borckardt et al., 2007; Borckardt et al., 2011; Donat, 2003; Taxis, 2002). Research into the use of a set of observation scales ('Crisis monitor') on acute psychiatric wards revealed that short term **risk assessment** was associated with less violence and less time spent in seclusion, but did not result in fewer patients in seclusion; therefore, more focused attention at an individual patient level for tailor made crisis plans was recommended (Van de Sande, 2014). At the other hand, the use of Joint Crisis Plans did not turn out to be more effective than treatment as usual to reduce compulsory treatment for people with psychosis, presumably because of poor clinician engagement and incomplete implementation (Thornicroft et al., 2013). Apparently, nor pure risk assessment neither the mere formulation of a crisis plan or treatment plan seems to suffice in the prevention of aggression and seclusion.

In contrast, the Early Recognition Method (Fluttert, Van Meijel, Nijman, Bjørkly, & Grypdonck, 2010) was found to be effective in the prevention of aggressive incidents and seclusion in forensic mental health care. This approach is based on the identification of the patients' early signs of aggression, which are assumed to be different between patients, the so-called 'signature risk signs'. The patient and the staff mentor cooperated in identifying early signs of loss of emotional equilibrium as well as potential preventive actions, described in an early detection plan. When warning signs emerged, these actions were carried out to help the patient regain his self-control (Fluttert et al., 2010). This method resembles the MWA in the recognition of the idiosyncrasies of the patients, culminating in a tailor-made plan of action and - unlike the Crisis Monitor - the equal weight given to risk assessment and de-escalating interventions. The effect size was more pronounced for patients with substance abuse and personality disorders than for patients with schizophrenia. For patients with psychotic disorders in general psychiatric practice, broadening the perspective from just risk signs to treatment needs in all live domains, such as offered by the MWA, might be more accurate. In conclusion, to improve the conditions for safe inpatient treatment, not the isolated use of treatment elements but the systematization of the treatment process in all its components is needed. A unique feature of the MWA is the cyclic nature and the emphasis on equal importance of all five phases.

As for the impact on **staff performance**, our conclusion that the implementation of the MWA promoted team cohesion, interdisciplinary collaboration and professionalization, resembles results in earlier scientific work: the multidisciplinary use of the Crisis monitor' fostered a shared language and subsequently enhanced efficient risk

communication between clinicians (Van de Sande, 2014) and the decrease in violence found after introduction of the Early Recognition Method was, at least partly, attributed to a greater insight of staff into early signs of violence, and to a shift of attention focused on these signs, rather than waiting for imminent crises (Fluttert et al., 2010). Multi-factorial inpatient aggression management models demonstrate the complex interplay of ward, staff and patient factors (Duxbury, 2002; Nijman, 2002).

On the basis of our research, we suggest that communication, collaboration and context are the essential ingredients in the prevention of aggression and seclusion. Patient factors are relevant insofar communication is influenced: very severe cognitive or intellectual disabilities or intoxication with alcohol or drugs for example, can hamper communication so seriously, that a situation with imminent aggression is perceived as uncontrollable; even then, the interaction skills of the professional on duty can make the difference. Characteristics of care providers of an emergency service were found to be related to the proportion of patient contacts for which they reported aggression (Penterman & Nijman, 2009). The dialogue between patient and professional is also influenced by the context, at diverse levels. Of immediate relevance is whether the professional can trust on the assistance of sufficient, qualified, colleagues. In the longer term ward safety is promoted by the provision of an effective, well-organized structure of rules and daily routines (Bowers, 2009), a methodical approach to patient care promoting the collaboration of professionals with each other and with the patient and family and an open psychological climate in which all participants are invited to learn from each other. Therefore, the MWA can also be an useful investment for psychiatric facilities adopting the High and Intensive Care (HIC)-model; this model is developed out of evidence-based and best practices to reduce seclusion and other coercive measures (Van Mierlo, Bovenberg, Voskes, & Mulder, 2014). As a framework to integrate the diverse components of treatment and the contributions of all participants, the MWA promotes communication and collaboration between patient, family and professionals, factors which have been designated as the fundaments of the HIC-model (Bouwhuis & Vreeker, 2015).

Our findings of the negative effects of organizational instability on staff performance and seclusion rates add to the work of previous authors who emphasize the importance of the **organizational context** (Duxbury, 2002; Huckshorn, 2004a). Colton & Xiong (2010) even state that 'organizational factors and leadership of administrators may have as much if not even more influence on seclusion reduction as knowledge about the individual being secluded'. Also Voskes (2014) concludes that the success of attempts to reduce seclusion depends on contextual factors, such as the presence of a long-term policy, the grounding in the organization and the collaboration with outsiders. As the formation of a group of professionals into a cohesive multidisciplinary team with a firm base of mutual trust and effective collaboration requires huge

efforts and a considerable period of time, mental health organizations should foster such teams once they have developed, and refrain from disturbing them by a next reorganization.

To set seclusion in context, patient aggression in psychiatric facilities has to be viewed as a complex multifaceted phenomenon, requiring a methodical management of intensive psychiatric care, and taking into account the professional ambience at all levels, from staff performance on the floor and collaboration within the multidisciplinary team, to the conditions provided by the administrators.

Conclusions and suggestions for further research

The intervention investigated in this thesis, the Methodical Work Approach, is essentially a relative simple and inexpensive intervention to improve staff performance. It does not require very intense training, at least in the Netherlands and Belgium, because it is already part of the professional training of almost all mental health personnel. It may be attractive for all involved professionals, as it concerns the heart of the treatment process and facilitates interdisciplinary collaboration, team cohesion and professionalization.

The MWA is a promising way of working to help a multidisciplinary team to limit the use of seclusion. It is worth validating this approach by replication in other mental health care services, in, for example, a prospective cohort study. To clarify and diminish the large facility effects on the use of coercive measures, systematic and prospective research into the effects of staff and organizational factors on seclusion rates is needed. Special attention should be paid to staff-patient communication and how this communication is effected by personal characteristics and skills of staff. Also, the influence of organizational strategies and events on staff and their ability to manage patient aggression needs further exploration.

Team performance in psychiatric facilities is rather sensitive to disruptive influences. Burdens from within or outside the team easily culminate in a resort to coercive measures. In addition to patient risk assessment, risk assessment on the level of the staff should be developed. One could think of a ‘staff crisis monitor’ to identify early signs of team dysfunction. Equally important is an immediate and effective response to immerging staff problems. Staff-centered risk management may prove to be at least as effective to prevent seclusion as patient risk assessment.

Finally, we need further study into multidisciplinary team learning during training and implementation of new working practices. A deeper understanding of the needs and strengths of the different disciplines during such learning processes helps to optimize strategies for organizational learning while enhancing interdisciplinary

collaboration. With further insights in the necessary conditions to bring out the potential of the MWA, multidisciplinary mental health care teams can use the methodical management of intensive psychiatric care to ameliorate the professional context of patient care and to promote the collaboration among professionals, patients, and their families.

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Appendix

Nederlandse samenvatting
Publications
Dankwoord
Curriculum Vitae

Nederlandse samenvatting

Psychiatrische stoornissen kunnen gepaard gaan met dreigend of daadwerkelijk gewelddadig gedrag. Strategieën om (potentiële) agressie van patiënten te hanteren behoren dan ook tot het standaard arsenaal van de geestelijke gezondheidszorg. Ter bescherming van patiënten en hun omgeving kan in klinische ggz-voorzieningen - als laatste redmiddel - worden overgegaan tot 'separeren'; dit is het voor verzorging, verpleging en behandeling insluiten van een patiënt in een speciaal daarvoor bestemde ruimte die aan de wettelijke eisen voldoet. Terwijl 'separeren' een van oudsher veelvuldig toegepaste dwangmaatregel is, is er voor de effectiviteit ervan geen wetenschappelijk bewijs; bovendien is het voor de meeste patiënten aversief en wordt het als traumatisch ervaren. Dit heeft wereldwijd tot bezorgdheid geleid, reden waarom er in de afgelopen jaren veel initiatieven zijn ontplooid om het gebruik van dergelijke dwangmaatregelen te verminderen. Het terugdringen van separeren verloopt echter moeizaam. Het trage tempo van verandering laat zien dat het omgaan met agressie op psychiatrische afdelingen een complex proces is. In dit proefschrift bestudeer ik het fenomeen van separeren vanuit het perspectief van de professionele omgeving waarin het plaatsvindt en onderzoek ik de relaties tussen een methodische opzet van intensieve psychiatrische zorg, het separeergebruik en de professionele context.

Een consistente (en intrigerende) bevinding sinds de jaren '90 van de vorige eeuw is dat het separeergebruik sterk verschilt per land, per ggz-instelling en per afdeling binnen dezelfde instelling. Zoals beschreven in **hoofdstuk 1,** worden deze grote verschillen tussen psychiatrische voorzieningen met betrekking tot separeergebruik in wetenschappelijk onderzoek onvoldoende verklaard vanuit patiëntfactoren**.** Daarentegen blijken kenmerken van de omgeving, zoals teamcultuur, structuur op de afdeling en attitude van de verpleegkundige staf, geassocieerd te zijn met agressie en de toepassing van dwangmaatregelen. Hiermee zijn context-gebonden factoren prominente kandidaten voor verder onderzoek om de separeerpraktijk te begrijpen – en te veranderen. Deze insteek is niet nieuw. In de literatuur zijn diverse voorbeelden beschreven van interventies gericht op het verbeteren van het functioneren van medewerkers. Telkens zijn deze interventies echter een onderdeel van veelomvattende projecten met een scala aan strategieën om het separeergebruik te reduceren. Dat maakt het moeilijk te bepalen welke de kritische elementen zijn voor het welslagen ervan. In de wetenschappelijke literatuur over het verminderen van separeren heeft ook het behandelproces als zodanig opvallend weinig aandacht gekregen, terwijl dit toch een natuurlijk aangrijpingspunt is voor het optimaliseren van het professioneel handelen. Het behandelproces is de rationale van de patiëntenzorg en kan in principe met bescheiden middelen worden aangepast. Verbetering

van het behandelproces zou een kosteneffectieve bijdrage kunnen zijn aan het terugdringen van separeergebruik. In dit proefschrift is onderzocht of een methodische opzet van het behandelproces bijdraagt aan een afname van separeren, en welke veranderingen hiermee gepaard gaan bij de individuele medewerkers en in het team als geheel.

Klopt het dat separatie veel meer het gevolg is van contextuele factoren dan van de kenmerken van de patiënt? Die vraag heb ik in **hoofdstuk 2** proberen te beantwoorden aan de hand van een studie naar de criteria die psychiatrisch verpleegkundigen hanteren ten aanzien van separeren. Verpleegkundigen zetten vrijwel altijd een separatie van een patiënt in gang, aangezien zij als eersten worden geconfronteerd met gevaarlijk gedrag op de afdeling. Inzicht in hun besluitvormingsproces kan aangrijpingspunten opleveren voor verandering. In deze studie hebben zestig psychiatrisch verpleegkundigen van 4 gesloten afdelingen met separeervoorziening een serie vignetten beoordeeld, met telkens een risicovolle situatie op de afdeling. De respondenten gaven aan op een schaal van 1-9 in welke mate zij geneigd waren de beschreven patiënt te separeren. De vignetten verschilden van elkaar op basis van kenmerken van de patiënt en kenmerken van de omgeving (8 variabelen). In een multilevel regressieanalyse analyseerden we de effecten van deze 8 variabelen op de beslissing van de verpleegkundigen. We vonden de grootste effecten voor de actuele personele bezetting en het onderling vertrouwen in het team enerzijds, en of een patiënt goed, dan wel niet of nauwelijks, aanspreekbaar is anderzijds. De 'aanspreekbaarheid' van de patiënt is echter veel meer dan enkel een kenmerk van de patiënt; het is feitelijk de resultante van (een poging tot) communicatie tussen verpleegkundige en patiënt. 'Zuivere' patiëntkenmerken, zoals diagnose en separatiegeschiedenis, hadden veel minder effect op de besluitvorming. De resultaten wijzen op het belang van de context: of een patiënt in een dreigende situatie al dan niet wordt gesepareerd is in hoge mate afhankelijk van de vraag of de verpleegkundige die in dienst is er in slaagt contact te krijgen met de patiënt en zo nodig kan terugvallen op voldoende en betrouwbare collega's. De subjectiviteit van de besluitvorming ten aanzien van separeren blijkt ook uit de gevonden grote individuele verschillen tussen verpleegkundigen in hun beoordeling.

In **hoofdstuk 3** wordt beschreven hoe een methodische opzet van het behandelproces wordt geïmplementeerd op een afdeling voor intensieve psychiatrische zorg. Onder 'methodisch werken' versta ik een gefaseerde, systematische, transparante, doelgerichte en toetsende manier van werken, bestaande uit 5 fasen: (1) verhelderen van de zorgvraag en omzetting van probleem naar doel, (2) onderzoek naar middelen om het doel te realiseren, (3) formuleren van een geïndividualiseerd behandelplan, (4) uitvoeren van de geformuleerde interventies en (5) evaluatie en bijstellen van het

behandelplan. Deze fasen kennen een cyclisch verloop, dat wil zeggen afhankelijk van de duur en de intensiteit doen ze zich vaker achter elkaar voor tijdens het behandelproces. De eerste stappen zijn om in samenspraak met patiënt en familie een behandelplan op maat te maken, zodat het voor de patiënt (en familie) inzichtelijk wordt hoe hij of zij kan samenwerken met het team om de doelen te verwezenlijken. Zo'n behandelplan biedt patiënten een meer voorspelbare omgeving en vormt een leidraad voor de verpleging. Door het cyclische karakter stimuleert het methodisch werken systematische evaluatie, dat wil zeggen kritische reflectie op de resultaten en op mogelijke oorzaken van haperingen in het beloop. De doelgerichte opzet van methodisch werken impliceert bijna automatisch een hoge prioriteit voor de preventie van separeren, aangezien de doelen van de patiënt niet vanuit de separeerkamer gerealiseerd kunnen worden en er dus veel aan gelegen is separatie te vermijden. De verwachting was dan ook dat methodisch werken zou bijdragen aan een vermindering van separeergebruik.

Om deze hypothese te toetsen is het methodisch werken geïmplementeerd op een gesloten afdeling voor langdurige, intensieve zorg aan patiënten met een psychose en verslavingsproblematiek; het separeergebruik naar aanleiding van agressie-incidenten was hoog. De interventie richtte zich op de vormgeving van het behandelproces. Het format van behandelplan en verpleegplan is herzien. Per zorgdomein konden probleem en sterke kanten, doel, interventies en uitvoerenden worden geformuleerd. De persoonlijke verpleegkundig begeleider kreeg een speciale rol in het voorbereiden van de patiënt en familie op de behandelbesprekingen. In dezelfde ggz-instelling fungeerden 3 andere afdelingen voor intensieve, complexe zorg als controlegroep: een afdeling voor langdurige, intensieve zorg voor patiënten met persoonlijkheidsstoornissen en/of verminderde begaafdheid, een forensisch-psychiatrische afdeling en een crisisinterventie- en behandelunit. Alle afdelingen participeerden tevens in het instellingsbrede project dat in 2006 van start ging om de toepassing van dwang- en drangmaatregelen, in het bijzonder separeren, te verminderen. Uitkomstmaten waren de incidentie en duur van separaties; hiervoor werden de kwartaalcijfers uit het Argus-registratiesysteem gebruikt van het tweede kwartaal van 2008 tot en met het tweede kwartaal van 2010. De hypothese dat de experimentele afdeling een sterkere reductie in separeergebruik zou bereiken dan de controle-afdelingen toetsten we met een multivariate regressieanalyse. We voerden twee afzonderlijke analyses uit, de ene gericht op de incidentie, de andere met de totale duur van separaties als afhankelijke variabele. Het belangrijkste resultaat is dat in de periode van het tweede kwartaal van 2008 tot en met het tweede kwartaal van 2010 op de experimentele afdeling zowel het aantal gestarte separaties als de totale duur van de separaties statistisch significant sterker daalde dan op de controle-afdelingen.

In welke mate het preventieve effect van methodisch werken op het separeergebruik samenhangt met veranderingen in de werkwijze/professionaliteit van de individuele verpleegkundigen is onderzocht in de studie beschreven in **hoofdstuk 4**. Daarbij heb ik gekeken naar de attitude en de besluitvorming ten aanzien van separeren, de werkbevlogenheid en de reflexiviteit in het team. Op geen van deze variabelen verschilden de verpleegkundigen van de experimentele afdeling van hun collega's van de controle-afdelingen. Het antwoord is dus negatief. Wel heb ik in de loop van het onderzoek bij de verpleegkundigen van alle deelnemende afdelingen een toenemend bewustzijn van het belang van contextuele factoren en van de eigen rol in het proces rondom separatie vastgesteld. Deze ontwikkeling was vermoedelijk het resultaat van de instellingsbrede discussie over separeren in het kader van het 'dwang en drang'-project. Hoe kwetsbaar een dergelijk proces is, bleek na een onverwachte vacaturestop voor de gehele instelling, welke een periode van organisatorische onrust inluidde. Voor de impliciete besluitvorming ten aanzien van separeren bleven contextuele factoren van groot belang, maar het expliciete besef hiervan nam weer af; dit suggereert dat 'automatische' responsen toenamen ten koste van meer bewuste besluitvorming. De negatieve effecten van instabiliteit in de organisatie kwamen ook tot uiting in de separatiecijfers: op alle aan het onderzoek deelnemende afdelingen steeg de separatieduur en op de experimentele afdeling nam ook het aantal separaties toe. De scores voor werkbevlogenheid daalden op alle afdelingen, het meest op de experimentele afdeling. Deze studie laat vooral zien hoe een innovatieproject negatief wordt beïnvloed door een nadelige verandering in de organisatorische context; op de onderzoeksvraag of veranderingen in de werkwijze/professionaliteit van de *individuele* verpleegkundigen verklaren dat het separeergebruik op de experimentele afdeling aanvankelijk afnam wordt geen antwoord gevonden.

Onderzoek naar de wijze waarop het methodisch werken *het team* van de experimentele afdeling heeft beïnvloed, staat daarom centraal in **hoofdstuk 5.** We onderzochten welke factoren hebben bijgedragen aan de afname van het separeren. In individuele behandeltrajecten bestudeerden we de werkwijze en rollen van de verschillende professionals tijdens de cyclus van het methodisch werken. Met een schriftelijke vragenlijst en een mondelinge bespreking in het multidisciplinaire team is het implementatieproces geëvalueerd. In deze kwalitatieve studie verschoof het focus van de verpleegkundige staf naar het multidisciplinaire team als geheel. De verpleging had weliswaar een sleutelrol in de beveiliging op de afdeling, maar het toepassen van de principes van het methodisch werken maakte het streven naar een veilig behandelproces tot een prioriteit van het gehele multidisciplinaire team. Daarmee bleek het methodisch werken drie, met elkaar samenhangende, veranderingen in gang te zetten: een toename van teamcohesie, interdisciplinaire samenwerking en professionalisering. Het specificeren van eenieders bijdrage aan het bereiken van de

onderscheiden doelen van de patiënt verhelderde niet alleen de rollen en verantwoordelijkheden van alle betrokken hulpverleners, maar bevorderde ook een cultuur van erkenning van elkaars inspanningen. Het onderling afstemmen en regelmatig evalueren van interventies versterkte de cohesie in het team. De samenwerking ontwikkelde zich van multidisciplinair naar interdisciplinair, waarbij de verschillende rollen sterk complementair aan elkaar werden gedefinieerd. Daardoor ontstond ruimte voor verdere professionalisering, zowel in de betekenis van uitbouw van kennis en expertise en het ontwikkelen van nieuwe werkwijzen, als in de betekenis van een toename van professionele autonomie en persoonlijke groei. Deze veranderingen lijken van cruciale betekenis voor het effect van methodisch werken op de preventie van separaties.

De klinische implicaties van onze bevindingen vormen het onderwerp van **hoofdstuk 6**. Deze implicaties zijn beschreven vanuit het perspectief van de afdelingspsychiater. Deze kan zijn of haar centrale positie in de zorginhoudelijke processen op een afdeling voor intensieve zorg aanwenden voor het faciliteren van de intra- en interprofessionele samenwerking in het kader van de behandelplancyclus. Effectieve interdisciplinaire samenwerking vereist zowel het behoud van differentiatie van de disciplinaire rollen als het ontwikkelen van gezamenlijke kerntaken. Het methodisch werken biedt daarvoor een prima rationale. Vanuit een integrale visie op de problematiek en op de wensen en mogelijkheden van patiënt, familie en professionals, kan de afdelingspsychiater een attitude uitdragen en een grondplan aanreiken, waarin alle betrokken disciplines hun interventies kunnen uitwerken. Terwijl de gehele behandelcyclus consequent wordt doorlopen totdat de doelen (voldoende) zijn gerealiseerd, blijft de inbreng van patiënt, familie en diverse professionals tijdens de uitvoering, evaluatie en revisie herkenbaar en toetsbaar. Dit methodisch (samen)werken kan een belangrijke factor vormen in de afname van agressie en dwangtoepassingen.

In **hoofdstuk 7** vat ik belangrijkste bevindingen van dit proefschrift samen, waarna ik methodologische en theoretische overwegingen bespreek. In de conclusie en suggesties voor verder onderzoek pleit ik voor een replicatie-studie om het methodisch werken verder te valideren als interventie om een multidisciplinair team te helpen het separeren terug te dringen. Ook wijs ik op het belang van systematische en prospectieve studies naar de effecten van personele en organisatorische factoren op separatiecijfers. Hierbij denk ik enerzijds aan de interactie tussen patiënten en medewerkers in relatie tot het hanteren van agressie en de invloed van persoonlijke kenmerken en vaardigheden van medewerkers op deze communicatie. Anderzijds denk ik aan de invloed van strategische veranderingen in de organisatie op de medewerkers en op hun vermogen om met agressie van patiënten om te gaan. Een team is in haar functioneren gevoelig voor verstorende invloeden; stressoren van

binnenuit of buitenaf leiden al snel tot een teruggrijpen op dwangtoepassingen. Daarom zou het ontwikkelen van een instrument voor ‘risicotaxatie’ op teamniveau, om bij de eerste tekenen van dysfunctioneren in het team te interveniëren, wel eens effectiever kunnen zijn om agressie en separatie van patiënten te voorkómen dan risicotaxatie op patiëntniveau. Tenslotte is verder onderzoek gewenst naar het leerproces van multidisciplinaire teams tijdens training en implementatie van nieuwe werkwijzen, om strategieën voor context-gebonden leren te optimaliseren. Multidisciplinaire ggz-teams kunnen profiteren van nieuwe inzichten in de benodigde condities om met een methodische opzet van intensieve psychiatrische zorg de professionele context van de patiëntenzorg te verbeteren en de samenwerking tussen patiënten, hun families en professionals te bevorderen.

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Curriculum Vitae

Christien Boumans werd geboren op 14 september 1959 in Amsterdam. Zij slaagde in 1977 voor het eindexamen gymnasium-βaan het Rythoviuscollege te Eersel. Uitgeloot voor geneeskunde, studeerde ze een jaar kunstgeschiedenis, om in 1978 te starten met de studie geneeskunde aan de Radboud Universiteit Nijmegen. Na het arts-examen in 1987 werkte zij als arts-assistent psychiatrie op een opname-afdeling van psychiatrisch ziekenhuis 'Wolfheze' (thans onderdeel van Pro Persona). Alhier was zij van 1988 tot 1993 in opleiding tot psychiater. Voor de stage 'sociale en acute psychiatrie' was zij van 1991 tot 1992 werkzaam bij de RIAGG Rivierenland, en voor de keuzestage 'ziekenhuispsychiatrie' van 1992 tot 1993 in ziekenhuis Rijnstate te Arnhem. Van 1993 tot 1996 werkte zij als psychiater op de polikliniek van psychiatrisch ziekenhuis 'Wolfheze'. Van 1996 tot 2014 was zij werkzaam in het Vincent van Gogh Instituut te Venray. Zij combineerde een functie op gesloten verblijfsafdelingen met werkzaamheden op de polikliniek (1996 -1998), de Kliniek voor Gedragstherapie (1998-2002), de gezins-verpleging en klinisch wonen (1996-2011). In multidisciplinair verband ontwikkelde en implementeerde ze voor patiënten met een borderline persoonlijkheidsstoornis een op de Dialectische gedragstherapie gebaseerd klinisch zorgaanbod, dat werd onderscheiden op de eerste publieksdag van Triade – Borderline in 2004. In 2007 stapte ze over naar een klinisch zorgprogramma voor langdurig zorgafhankelijke patiënten met psychotische stoornissen en verslavingsproblematiek. Hier werd het onderzoek uitgevoerd dat heeft geresulteerd in dit proefschrift. Vanaf 2014 zette zij haar wetenschappelijke activiteiten voort bij GGZ Oost Brabant, Huize Padua, waar zij in de langdurige intensieve zorg verbonden is aan de High & Intensive Care (HIC) en de klinische behandeling van patiënten met ernstige psychiatrische stoornissen en comorbiditeit, waaronder verslavingsproblematiek.